

INVENTOR SEARCH

=> d his 188

(FILE 'CASREACT' ENTERED AT 11:56:06 ON 23 OCT 2007)

L88 15 S L87 AND L21

=> d que 188

L21 QUE ABB=ON PLU=ON PY<20043 OR PRY<2004 OR AY<2004 OR MY<2004 OR REVIEW/DT

L54 70 SEA FILE=HCAPLUS ABB=ON PLU=ON "OXENO OLEFINCHEMIE G M B H GERMANY"/PA,CS,SO,CO

L56 QUE ABB=ON PLU=ON FRIDAG D?/AU

L57 QUE ABB=ON PLU=ON MOELLER O?/AU

L58 QUE ABB=ON PLU=ON MOLLER O?/AU

L59 QUE ABB=ON PLU=ON ORTMANN D?/AU

L60 QUE ABB=ON PLU=ON ("WIESE K"/AU OR "WIESE K D"/AU OR "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE KLAUS DIETHER"/AU)

L82 21 SEA FILE=CASREACT ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE, KLAUS-DIETHER"/AU)

L83 30 SEA FILE=CASREACT ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)

L84 30 SEA FILE=CASREACT ABB=ON PLU=ON L82 OR L83

L85 8 SEA FILE=CASREACT ABB=ON PLU=ON L84 AND L54

L86 10 SEA FILE=CASREACT ABB=ON PLU=ON L84 AND ?PHOSPHOR?

L87 15 SEA FILE=CASREACT ABB=ON PLU=ON (L85 OR L86)

L88 15 SEA FILE=CASREACT ABB=ON PLU=ON L87 AND L21

=> d his 166

(FILE 'HCAPLUS' ENTERED AT 11:45:12 ON 23 OCT 2007)

L66 34 S L65 AND L21

=> d que 166

L21 QUE ABB=ON PLU=ON PY<20043 OR PRY<2004 OR AY<2004 OR MY<2004 OR REVIEW/DT

L53 55 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE, KLAUS-DIETHER"/AU)

L54 70 SEA FILE=HCAPLUS ABB=ON PLU=ON "OXENO OLEFINCHEMIE G M B H GERMANY"/PA,CS,SO,CO

L55 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND L54

L56 QUE ABB=ON PLU=ON FRIDAG D?/AU

L57 QUE ABB=ON PLU=ON MOELLER O?/AU

L58 QUE ABB=ON PLU=ON MOLLER O?/AU

L59 QUE ABB=ON PLU=ON ORTMANN D?/AU

L60 QUE ABB=ON PLU=ON ("WIESE K"/AU OR "WIESE K D"/AU OR "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE KLAUS DIETHER"/AU)

L62 203 SEA FILE=HCAPLUS ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)

L63 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L62 AND L54

L64 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L62 AND ?PHOSPHOR?

L65 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L55 OR L63 OR L64

L66 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 AND L21

=> dup rem 188 166

FILE 'CASREACT' ENTERED AT 12:00:36 ON 23 OCT 2007
 USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
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FILE 'HCAPLUS' ENTERED AT 12:00:36 ON 23 OCT 2007

10/584,492

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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PROCESSING COMPLETED FOR L88

PROCESSING COMPLETED FOR L66

L90 34 DUP REM L88 L66 (15 DUPLICATES REMOVED)

ANSWERS '1-15' FROM FILE CASREACT

ANSWERS '16-34' FROM FILE HCAPLUS

INVENTOR SEARCH RESULTS

=> d 190 1-34 ibib ab

L90 ANSWER 1 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 1
 ACCESSION NUMBER: 145:82992 CASREACT Full-text
 TITLE: Catalytic dimerization method for the
 production of unbranched and acyclic
 octatrienes from 1,3-butadiene
 INVENTOR(S): Beller, Matthias; Jackstell, Ralf; Surendra,
 Harkal; **Ortmann, Dagmara**; Nierlich,
 Franz
 PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: PCT Int. Appl., 30 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006063892	A1	20060622	WO 2005-EP55419	20051020
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BE, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM DE 102004060520 A1 20060622 DE 2004-10200406052020041216 AU 2005315749 A1 20060622 AU 2005-315749 20051020 CA 2591398 A1 20060622 CA 2005-2591398 20051020 EP 1824802 A1 20070829 EP 2005-808031 20051020 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR PRIORITY APPLN. INFO.: DE 2004-10200406052020041216				

WO 2005-EP55419 20051020

OTHER SOURCE(S): MARPAT 145:82992

AB Unbranched, acyclic octatrienes (e.g., 1,3,7-octatriene) are prepared in high yield and selectivity by the dimerization of 1,3-butadiene in the presence of a secondary alc. (e.g., cyclohexanol), a base (e.g., sodium cyclohexanolate), and as the catalyst a carbene ligand [I; R1, R2 = C1-3 alkyl; R3, R4 = H, C1-3 alkyl; e.g., 1,3-bis(2,6-diisopropylphenyl)-4,5-dimethyl-2-dehydro-3-hydroimidazole] which contains a Group VIIIB metal (e.g., Pd).

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L90 ANSWER 2 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 2
 ACCESSION NUMBER: 145:315080 CASREACT Full-text
 TITLE: O-acylphosphites: new and promising ligands
 for isomerizing hydroformylation
 AUTHOR(S): Selent, Detlef; **Wiese, Klaus-Diether**
 ; Boerner, Armin

CORPORATE SOURCE: Leibniz-Institut fuer Organische Katalyse,
Rostock, D-18055, Germany
SOURCE: Chemical Industries (Boca Raton, FL, United
States) (2005), 104(Catalysis of
Organic Reactions), 459-469
CODEN: CHEIDI; ISSN: 0737-8025
PUBLISHER: CRC Press LLC
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Bidentate **phosphorus** ligands bearing an O-acyl phosphite moiety show superior modifying properties to the rhodium catalyst used in the hydroformylation of internal olefins. Results obtained for the hydroformylation of internal octenes and 2-pentene, resp., are presented. The new ligands do markedly enhance the isomerization activity of the rhodium center. Internal hydroformylation is clearly disfavored. At 120 °C/20 bar CO/H₂, a predominant terminal reaction is achieved. Thus, a 0.65...0.8 M fraction of the desired terminal product is obtained with an aldehyde chemoselectivity exceeding 99.7%. Depending on the ligand structure and the olefinic substrate used, excellent turn over frequencies between 3000 and 7000 h⁻¹ have been estimated. Further results concerning the coordination behavior of the new ligands towards the precatalyst [acacRh(COD)] itself, as well as high pressure NMR investigations in the formation of O-acylphosphite-phosphite hydrido rhodium complexes, are presented.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 3 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 140:217293 CASREACT Full-text
TITLE: hydroformylation of olefins in the presence of
Group 8-10 metal catalysts and cyclic
carbonate esters
INVENTOR(S): **Moeller, Oliver; Fridag,**
Dirk; Borgmann, Cornelia; Hess, Dieter;
Wiese, Klaus-Diether
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10327434	A1	20040304	DE 2003-10327434	20030618
CA 2496838	A1	20040311	CA 2003-2496838	20030807
WO 2004020380	A1	20040311	WO 2003-EP8736	20030807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003253389	A1	20040319	AU 2003-253389	20030807
EP 1532094	A1	20050525	EP 2003-790872	20030807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003013866	A	20050705	BR 2003-13866	20030807
CN 1678557	A	20051005	CN 2003-820194	20030807
JP 2005536560	T	20051202	JP 2004-532060	20030807

MX 2005PA02283	A	20050608	MX 2005-PA2283	20050228
ZA 2005001710	A	20050906	ZA 2005-1710	20050228
IN 2005CN00280	A	20070907	IN 2005-CN280	20050228
US 2006241324	A1	20061026	US 2006-525376	20060508
PRIORITY APPLN. INFO.:			DE 2002-10240253	20020831
			DE 2003-10327434	20030618
			WO 2003-EP8736	20030807

OTHER SOURCE(S): MARPAT 140:217293

AB C3-24 olefins were hydroformylated in the presence of ≥ 1 Group 8-10 metal catalyst, ≥ 0.1 mol% cyclic carbonate [I; R1-R4 = H, (substituted) (cyclic) (aromatic) C1-27 hydrocarbyl; n = 0-5; X = (substituted) (cyclic) (aromatic) hydrocarbylene], and ≥ 1 ligand not containing sulfonic acid or sulfonate groups. Thus, a mixture of propylene carbonate, rhodium nonanoate, tris(2,4-di-tert-butylphenyl)phosphite, and 1-octene was autoclaved at 100° under 20 bar H₂/CO for 50 min. to give 49.4% n-nonanal. An apparatus diagram is given.

L90 ANSWER 4 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 4
 ACCESSION NUMBER: 139:383057 CASREACT Full-text
 TITLE: Method for producing C13-alcohol mixtures
 INVENTOR(S): Kaizik, Alfred; Toetsch, Walter; Droste, Wilhelm; Bueschken, Wilfried; Roettger, Dirk; Wiese, Klaus-Diether
 PATENT ASSIGNEE(S): Oxeno Olefinchemie G.m.b.H., Germany
 SOURCE: PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003095402	A1	20031120	WO 2003-EP3066	20030325
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10220799	A1	20031211	DE 2002-10220799	20020510
AU 2003216879	A1	20031111	AU 2003-216879	20030325
EP 1515934	A1	20050323	EP 2003-712086	20030325
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1653023	A	20050810	CN 2003-810596	20030325
JP 2005532317	T	20051027	JP 2004-503426	20030325
ZA 2004010000	A	20060628	ZA 2004-10000	20041209
US 2005234270	A1	20051020	US 2005-513360	20050420
US 7138552	B2	20061121		

PRIORITY APPLN. INFO.: DE 2002-10220799 20020510
 WO 2003-EP3066 20030325

AB A method for producing a C13-alc. mixture, useful as a precursor for the production of surfactants and plasticizers (no data), comprises: (A) the trimerization of butene-containing hydrocarbon mixts using a Ni-supported catalyst; (B) separation of the C12-olefin fraction from the reaction mixture; (C) hydroformylation of the C12 olefins

using a modified Rh catalyst; (D) separation of the hydroformylation catalyst; and (E) hydrogenation of the hydroformylation product to give C13 alcs.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 5 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 138:305804 CASREACT Full-text
TITLE: Production of 6-methyl-2-heptanone and its use
INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann,
Guido
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003031383	A1	20030417	WO 2002-EP10873	20020927
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10149349	A1	20030417	DE 2001-10149349	20011006
AU 2002338820	A1	20030422	AU 2002-338820	20020927
EP 1440051	A1	20040728	EP 2002-777243	20020927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1564797	A	20050112	CN 2002-819785	20020927
JP 2005504839	T	20050217	JP 2003-534371	20020927
US 2004249218	A1	20041209	US 2004-490451	20040324
PRIORITY APPLN. INFO.:			DE 2001-10149349	20011006
			WO 2002-EP10873	20020927

OTHER SOURCE(S): MARPAT 138:305804

AB The invention relates to a method for producing 6-methyl-2-heptanone characterized by the steps of (a) hydroformylation of 2-methylpropene into 3-methylbutanal, (b) basic catalyzed aldol condensation of the 3-methylbutanal with acetone into 6-methyl-3-hepten-2-one, whereby the molar ratio of 3-methylbutanal to the base that is used is greater than 1:0.3, and (c) hydrogenation of the 6-methyl-3-hepten-2-one to obtain 6-methyl-2-heptanone.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 6 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 138:187924 CASREACT Full-text
TITLE: Preparation of new phosphite ligands and their
metal complexes as hydroformylation catalysts
for olefins
INVENTOR(S): Selent, Detlef; Boerner, Armin; Borgmann,
Cornelia; Hess, Dieter; **Wiese,**
Klaus-Diether
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany

SOURCE: Ger. Offen., 14 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10140086	A1	20030227	DE 2001-10140086	20010816
WO 2003016321	A2	20030227	WO 2002-EP9050	20020813
WO 2003016321	A3	20031106		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002324051	A1	20030303	AU 2002-324051	20020813
EP 1423398	A2	20040602	EP 2002-758461	20020813
EP 1423398	B1	20060517		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1543470	A	20041103	CN 2002-816056	20020813
JP 2005500385	T	20050106	JP 2003-521243	20020813
EP 1586577	A1	20051019	EP 2005-105175	20020813
EP 1586577	B1	20061004		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
AT 326474	T	20060615	AT 2002-758461	20020813
AT 341557	T	20061015	AT 2005-105175	20020813
ES 2261712	T3	20061116	ES 2002-2758461	20020813
ES 2271934	T3	20070416	ES 2005-5105175	20020813
US 2004236133	A1	20041125	US 2004-485811	20040210
US 7161020	B2	20070109		
MX 2004PA01350	A	20040505	MX 2004-PA1350	20040212
PRIORITY APPLN. INFO.:				
			DE 2001-10140086	20010816
			EP 2002-758461	20020813
			WO 2002-EP9050	20020813

OTHER SOURCE(S): MARPAT 138:187924

AB The preparation of title compds., I (R1-R4 = C1-50 un(substituted) aliphatic, alicyclic, aromatic, heteroarom., aliphatic-alicyclic, aliphatic-aromatic, heterocyclic, aliphatic-heterocyclic, H, F, Cl, Br, I, CF3, etc.; R5 = C1-50 (un)substituted aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, heteroarom., aliphatic-aromatic; k = 0, 1) and their metal complexes, useful as ligands for transition metal catalyzed olefin hydroformylation reactions, is described. Thus, phosphination of lithiated 2,4-di-tert-butylphenol with 2-chloro-4H-1,3,2- benzodioxaphosphorin-4-one gave the ligand cocatalyst for [Rh(1,5-cyclooctadiene)acac]-catalyzed hydroformylation of 1-octene.

L90 ANSWER 7 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 7
 ACCESSION NUMBER: 138:187923 CASREACT Full-text
 TITLE: Preparation of new phosphite ligands and their metal complexes as hydroformylation catalysts for olefins
 INVENTOR(S): Schmutzler, Reinhard; Neda, Ion; Kunze, Christine; Boerner, Armin; Selent, Detlef;

Borgmann, Cornelia; Hess, Dieter; **Wiese, Klaus-Diether**
 PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany
 SOURCE: Ger. Offen., 16 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10140083	A1	20030227	DE 2001-10140083	20010816
WO 2003016320	A1	20030227	WO 2002-EP8798	20020807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002336082	A1	20030303	AU 2002-336082	20020807
EP 1417212	A1	20040512	EP 2002-769970	20020807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1543469	A	20041103	CN 2002-816052	20020807
JP 2005500384	T	20050106	JP 2003-521242	20020807
MX 2004PA01348	A	20040505	MX 2004-PA1348	20040212
US 2004236134	A1	20041125	US 2004-485817	20040615
US 7009068	B2	20060307		
PRIORITY APPLN. INFO.:			DE 2001-10140083	20010816
			WO 2002-EP8798	20020807

OTHER SOURCE(S): MARPAT 138:187923

AB The preparation of title compds., I and II (R1-R4 = C1-50 un(substituted) aliphatic, alicyclic, aromatic, heteroarom., aliphatic-alicyclic, aliphatic-aromatic, heterocyclic, aliphatic-heterocyclic, H, F, Cl, Br, I, CF3, etc.; Q = C1-50 k binding (un)substituted aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, heteroarom., aliphatic-aromatic; Q = O, S) and their metal complexes, useful as ligands for transition metal catalyzed olefin hydroformylation reactions, is described. Thus, phosphination of 2-hydroxy-1-naphthalenecarboxylic acid with PCl3 in N-methyl-2-pyrrolidinone gave 91% phosphite ligand. Phosphination of lithiated p-tert-butylbis(dimethoxycalix[4]arene) with phosphite ligand gave the cocatalyst for [Rh(1,5- cyclooctadiene)acac]-catalyzed hydroformylation of 1-octene.

L90 ANSWER 8 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 8
 ACCESSION NUMBER: 139:350842 CASREACT Full-text
 TITLE: Reactions of a Hydroxy Phosphonite Ligand in the Coordination Sphere of Rhodium(I)
 AUTHOR(S): Selent, Detlef; Baumann, Wolfgang; Kempe, Rhett; Spannenberg, Anke; Roettger, Dirk; **Wiese, Klaus-Diether**; Boerner, Armin
 CORPORATE SOURCE: Leibniz-Institut fuer Organische Katalyse, Universitaet Rostock e. V., Rostock, 18055, Germany
 SOURCE: Organometallics (2003), 22(21), 4265-4271
 CODEN: ORGND7; ISSN: 0276-7333
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal

LANGUAGE: English

AB The complexation behavior of 6-(3,3'-di-tert-butyl-5,5'-dimethoxy-2-hydroxy-2'-oxybiphenyl)-6H-[c,e]-1,2-oxaphosphorine, which generates an active and n-regioselective rhodium(I) catalyst for the isomerizing hydroformylation of internal octenes, was studied. Investigations in the absence of CO/H₂ revealed that coordination of the phenolate moiety of the hydroxy phosphonite on the rhodium center is possible. Interestingly, under conditions related to the hydroformylation (syngas, higher temperature and P:Rh ratios) the ligand suffers two transformations. The first is based on a transesterification reaction involving 2 equivalent of the hydroxy phosphonite, giving rise to a substituted biphenol and a sym. bidentate **phosphorus** ligand of a heretofore uncertain structure. The second transformation is concerned with a selective Rh(I)-catalyzed P-C bond cleavage of the initial phosphonite structure under the formation of a phosphite. X-ray structural analyses will illustrate the structures of rhodium(I) complexes bearing the original hydroxy phosphonite ligand, a phenoxy phosphonite chelate, and a phosphite formed by selective P-C bond cleavage, resp.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 9 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 9

ACCESSION NUMBER: 137:154688 CASREACT Full-text

TITLE: Condensation of aldehydes with ketones to
 α,β -unsaturated ketones by
multiphase reaction in a packed tube reactor

INVENTOR(S): Protzmann, Guido; **Wiese, Klaus-Diether**
; Bueschken, Wilfried

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1231199	A1	20020814	EP 2002-633	20020111
EP 1231199	B1	20050720		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10106186	A1	20020814	DE 2001-10106186	20010210
AT 299852	T	20050815	AT 2002-633	20020111
NZ 516986	A	20020927	NZ 2002-516986	20020201
BR 2002000319	A	20021029	BR 2002-319	20020204
TW 237633	B	20050811	TW 2002-91102061	20020206
HU 2002000461	A2	20020828	HU 2002-461	20020207
MX 2002PA01350	A	20040622	MX 2002-PA1350	20020207
CA 2370808	A1	20020810	CA 2002-2370808	20020208
NO 2002000650	A	20020812	NO 2002-650	20020208
AU 200215515	A	20020815	AU 2002-15515	20020208
AU 781210	B2	20050512		
ZA 2002001104	A	20020822	ZA 2002-1104	20020208
JP 2002284730	A	20021003	JP 2002-32317	20020208
CN 1369470	A	20020918	CN 2002-104597	20020209
US 2002161264	A1	20021031	US 2002-68955	20020211
US 6603047	B2	20030805		

PRIORITY APPLN. INFO.: DE 2001-10106186 20010210

OTHER SOURCE(S): MARPAT 137:154688

AB R2CH:CR3C(O)R1 [R1, R2 = (branched) (saturated) (alicyclic) (substituted) C1-20 especially C1-16 group, (saturated) (substituted) alicyclic C5-12 group, araliph. C7-15 group preferably PhCH₂, aromatic C group preferably Ph; R3 = H, aliphatic (substituted) C1-10 group; or R1R3 = alicyclic ring] were prepared by reacting an aldehyde R2CH(O) (R2 as above) with a ketone R3CH₂C(O)R1 (R1, R3 as above) in liquid phase in a packed

tube reactor having a load factor of ≥ 0.8 . Condensation of AcMe and 3-methylbutanal gave 86% 6-methyl-3-hepten-2-one in selectivity of 95%.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 10 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 136:401882 CASREACT Full-text
TITLE: Preparation of novel phosphinine compounds and
their metal complexes as catalysts for
hydroformylation reaction
INVENTOR(S): Roettger, Dirk; Hess, Diether; Boerner, Armin;
Selent, Detlef; Kadyrov, Renat; **Wiese,**
Klaus-Dieter; Borgmann, Cornelia
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany
SOURCE: Eur. Pat. Appl., 28 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1209164	A1	20020529	EP 2001-124864	20011018
EP 1209164	B1	20031210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10058383	A1	20020529	DE 2000-10058383	20001124
AT 256135	T	20031215	AT 2001-124864	20011018
ES 2208510	T3	20040616	ES 2001-1124864	20011018
US 2002103375	A1	20020801	US 2001-989077	20011121
US 6818770	B2	20041116		
JP 2002212195	A	20020731	JP 2001-357869	20011122
US 2005043279	A1	20050224	US 2004-911499	20040805
US 7217828	B2	20070515		
PRIORITY APPLN. INFO.:			DE 2000-10058383	20001124
			US 2001-989077	20011121

OTHER SOURCE(S): MARPAT 136:401882

AB The preparation of title compds. I ($n = 0-1$; $Y = O, NH$, organoamino; $R_1-R_9 = H$, aliphatic or aromatic hydrocarbyl, F, Cl, Br, I, CF_3 , alkoxy, organocarbonyl, alkoxy carbonyl, alkali, alkaline earth metal, ammonium, phosphonium substituted alkoxy carbonyl, organothio, organosulfonyl, etc.; $Q, W, X = C_1-50$ aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aliphatic-aromatic hydrocarbyl), useful as cocatalyst for [acacRh(COD)] catalyzed hydroformylation reaction, is described. Thus, cyclization of 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) with PCl_3 in THF in presence of pyridine followed by alkoxylation with lithiated 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) and condensation with lithiated 10-chloro-9,10-dihydro-9-aza-10-phosphaphenanthrene gave 48% title compound II. II cocatalyzed and [acacRh(COD)] catalyzed hydroformylation of 1-octene to give nonanal is described.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 11 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 11
ACCESSION NUMBER: 136:340833 CASREACT Full-text
TITLE: Preparation of bisphosphites and their metal
complexes as catalysts for hydroformylation
reactions
INVENTOR(S): Roettger, Dirk; Hess, Dieter; **Wiese,**
Klaus-Diether; Borgmann, Cornelia;
Boerner, Armin; Selent, Detlef; Schmutzler,
Reinhard; Kunze, Christine

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: Eur. Pat. Appl., 29 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1201675	A1	20020502	EP 2001-122420	20010920
EP 1201675	B1	20040121		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10053272	A1	20020508	DE 2000-10053272	20001027
AT 258183	T	20040215	AT 2001-122420	20010920
ES 2211710	T3	20040716	ES 2001-1122420	20010920
JP 2002193987	A	20020710	JP 2001-329624	20011026
US 2002111487	A1	20020815	US 2001-984263	20011029
US 6570033	B2	20030527		

PRIORITY APPLN. INFO.: DE 2000-10053272 20001027

OTHER SOURCE(S): MARPAT 136:340833

AB The preparation of bisphosphites, I (R1-R4 = H, C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aromatic, etc. hydrocarbyl group; F, Cl, Br, I, CF3, alkoxy, etc.; Q = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, etc. bivalent hydrocarbyl; W, X = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, hydrocarbyl group), useful as cocatalyst for transition metal catalyzed hydroformylation reaction is described. Thus, phosphination of 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) with PCl3 in presence of pyridine followed by reaction with lithiation and phosphination with 2-chloro-1,3-dioxo-2-phosphaanthracen-4-one gave title compound II. [AcacRh(COD)] catalyzed hydroformylation of 1-octene in presence of cocatalyst II gave 79% nonanal.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L90 ANSWER 12 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 12
 ACCESSION NUMBER: 134:366600 CASREACT Full-text
 TITLE: Continuous hydroformylation of C2-25 olefins
 by multiphase reaction using tube reactors.
 INVENTOR(S): Protzmann, Guido; Wiese, Klaus-Diether
 ; Bueschken, Wilfried; Roettger, Dirk
 PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: Ger. Offen., 26 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19957528	A1	20010531	DE 1999-19957528	19991130
EP 1106594	A2	20010613	EP 2000-122423	20001013
EP 1106594	A3	20020508		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
SG 97975	A1	20030820	SG 2000-6623	20001115
MX 2000PA11539	A	20020314	MX 2000-PA11539	20001123
JP 2001163820	A	20010619	JP 2000-360099	20001127
CA 2327022	A1	20010530	CA 2000-2327022	20001128
ZA 2000007014	A	20010605	ZA 2000-7014	20001129
CN 1297876	A	20010606	CN 2000-134292	20001129
TW 226883	B	20050121	TW 2000-89125322	20001129
US 2001003785	A1	20010614	US 2000-725518	20001130

US 6555716	B2	20030429		
BR 2000005637	A	20010717	BR 2000-5637	20001130
RO 121026	B1	20061130	RO 2000-1177	20001130
PL 193120	B1	20070131	PL 2000-344211	20001130
PRIORITY APPLN. INFO.:			DE 1999-19957528	19991130

AB Hydroformylation of C2-25 olefins is carried out by multiphase reaction in a tube reactor, whereby: (1) the catalysts (especially water-soluble Rh compds.) is present in the continuous phase, (2) the continuous phase contains a mixture of H₂O and a water-soluble organic solvent containing ≥ 2 O atoms and the solvent mixture has a dielec. constant of 50-78, (3) ≥ 1 olefin is present in the disperse phase, and (4) the load factor of the tube reactor is >0.8 . Mass ratio of the continuous phase to the disperse phase is >2 , and the continuous phase is moved by a jet nozzle placed before the reactor. Aldehydes prepared by the described hydroformylation are especially useful for the preparation of alcs., carboxylic acids, or for aldol condensation. The title hydroformylation process compared to the conventional methods gives high yields at low temperature, reduces byproduct formation ($<2\%$) and catalyst deactivation; unreacted starting materials can be recycled to the reactor. The hydroformylation was demonstrated by the preparation of CH₃(CH₂)₂CHO from CH₃CH:CH using cat. Rh acetate with TPPTS-ligands in H₂O/(CH₂OH)₂ in comparison to the batch process and at various reaction conditions.

L90 ANSWER 13 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 13
 ACCESSION NUMBER: 135:5378 CASREACT Full-text
 TITLE: Catalytic aldol condensation of C1-15 aldehydes by multiphase reaction
 INVENTOR(S): Wiese, Klaus-Diether; Protzmann, Guido; Koch, Juergen; Bueschken, Wilfried
 PATENT ASSIGNEE(S): Oxeno Olefinchemie G.m.b.H., Germany
 SOURCE: Ger. Offen., 20 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19957522	A1	20010531	DE 1999-19957522	19991130
EP 1106596	A2	20010613	EP 2000-122424	20001013
EP 1106596	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6340778	B1	20020122	US 2000-694350	20001024
SG 86452	A1	20020219	SG 2000-6842	20001116
MX 2000PA11542	A	20020314	MX 2000-PA11542	20001123
JP 2001163823	A	20010619	JP 2000-359863	20001127
CA 2327047	A1	20010530	CA 2000-2327047	20001128
CN 1297877	A	20010606	CN 2000-134293	20001129
ZA 2000007013	A	20010607	ZA 2000-7013	20001129
TW 548264	B	20030821	TW 2000-89125323	20001129
BR 2000005672	A	20011127	BR 2000-5672	20001130
PL 192943	B1	20061229	PL 2000-344210	20001130

PRIORITY APPLN. INFO.: DE 1999-19957522 19991130
 AB Catalytic aldol condensation of C1-15 aldehydes is carried out by multiphase reaction in a tube reactor whereby: (1) the catalyst (H₂O-soluble base) is present in the continuous phase at 0.1-15 weight%, (2) the disperse phase contains ≥ 1 aldehyde, and (3) the load factor of the reactor is ≥ 0.8 . The continuous phase consists of H₂O and a H₂O-soluble organic solvent, and the mass ratio of the continuous phase to the disperse phase is >2 . Thus, aldol condensation of n-pentanal at 110° using cat. NaOH in diethylene glycol (DEG) at a flow of 400 kg/h gives 95.4 weight% 2-propylheptenal. α,β -Unsatd. aldehydes prepared by described aldol condensation are especially useful after hydrogenation for preparation of alcs. for manufacture of softeners, detergents, or solvents; or after hydrogenation and oxidation for preparation of carboxylic acids.

Compared to conventional methods, the present process gives high yields at low temperature and reduces byproduct formation and catalyst deactivation.

L90 ANSWER 14 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 14

ACCESSION NUMBER: 136:199931 CASREACT Full-text
 TITLE: Synthesis of pyrrolyl-, indolyl-, and carbazolyphosphanes and their catalytic application as ligands in the hydroformylation of 2-pentene
 AUTHOR(S): Jackstell, Ralf; Klein, Holger; Beller, Matthias; **Wiese, Klaus-Diether**; Rottger, Dirk
 CORPORATE SOURCE: Institut fur Organische Katalyseforschung (IfOK) an der Universitat Rostock e.V., Rostock, 18055, Germany
 SOURCE: European Journal of Organic Chemistry (2001), (20), 3871-3877
 CODEN: EJOCFK; ISSN: 1434-193X
 PUBLISHER: Wiley-VCH Verlag GmbH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The synthesis of π -acceptor ligands of the type PAr_xR_3-x ($x = 0-2$; $R = \text{pyrrolyl}$, indolyl, carbazolyl; $Ar = \text{aryl}$) and $P(\text{pyrrolyl})_2(\text{carbazolyl})$ is described. Ligands included 1,1',1''-phosphinidynetris[1H-pyrrole], 1,1',1''-phosphinidynetris[1H-indole], 1,1',1''-phosphinidynetris[9H-carbazole] and derivs. thereof. These ligands can be prepared in good to excellent yields by treatment of the corresponding free heterocyclic amines with **phosphorus** chlorides in the presence of base. The utilization of pyrrolyl-, indolyl-, and carbazolyphosphanes in the rhodium-catalyzed hydroformylation of 2-pentene demonstrates the influence of the ligand π -acidity on regioselectivity and activity in the hydroformylation of internal olefins. In general, increasing π -acidity of the ligand results in an increased yield of the linear oxo product. The best n/iso ratios of about 60:40 are obtained at low synthesis gas pressure (10 bar) in the presence of the $P(\text{pyrrolyl})_3$ ligand.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L90 ANSWER 15 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 15

ACCESSION NUMBER: 135:152873 CASREACT Full-text
 TITLE: New **phosphorus** ligands for the rhodium-catalyzed isomerization/hydroformylation of internal octenes
 AUTHOR(S): Selent, Detlef; Hess, Dieter; **Wiese, Klaus-Diether**; Rottger, Dirk; Kunze, Christine; Borner, Armin
 CORPORATE SOURCE: Institut fur Organische Katalyseforschung an der Universitat Rostock e. V., Rostock, 18055, Germany
 SOURCE: Angewandte Chemie, International Edition (2001), 40(9), 1696-1698
 CODEN: ACIEF5; ISSN: 1433-7851
 PUBLISHER: Wiley-VCH Verlag GmbH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The results that emphasize the astounding potential of π -acid bidentate ligands, e.g. I, of unsym. structure have in the hydroformylation of isomers of n-octenes is described. The preparation of seven such ligands is also described. Thus, $[Rh(\text{acac})(\text{cod})]$ -catalyzed hydroformylation of n-octene in the presence of ligand I gave 94% n-nonanal.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L90 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2007:251872 HCAPLUS Full-text
 DOCUMENT NUMBER: 146:317783
 TITLE: Carbonylation in the presence of sterically hindered secondary amines
 INVENTOR(S): Hess, Dieter; **Ortmann, Dagmara;**
Moeller, Oliver; Wiese, Klaus-Diether; Fridag, Dirk;
 Bueschken, Wilfried
 PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: Ger. Offen., 32pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005042464	A1	20070308	DE 2005-102005042464	2005 0907
WO 2007028660	A1	20070315	WO 2006-EP62872	2006 0602

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: DE 2005-102005042464A
 2005
 0907

OTHER SOURCE(S): MARPAT 146:317783

AB In the title process, giving products useful, i.a., as stabilizers for PVC and curing accelerators for coatings, compds. are carbonylated in the presence of Group VIIIB metal complexes with organic P compds. and sterically-hindered secondary amines of specified structure. The ligand (I) was prepared by the oxidative coupling of 2,4-di-tert-butylphenol to give 4,4',6,6'-tetra-tert-butyl-2,2'-diphenol, reaction with PCl₃ to give a cyclic chlorophosphite, and reaction with 2-hydroxy-2-naphthoic acid to give I. Hydroformylation of 1-octene in the presence of Rh nonanoate and I is exemplified.

L90 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2006:191026 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:274694
 TITLE: Telomerization of acyclic olefins
 INVENTOR(S): Borgmann, Cornelia; Roettger, Dirk;
Ortmann, Dagmara; Bukohl, Reiner;
 Houbrechts, Stephan; Nierlich, Franz
 PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: Ger. Offen., 23 pp.
 CODEN: GWXXBX

DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005036038	A1	20060302	DE 2005-102005036038	2005 0801
DE 102005036039	A1	20060302	DE 2005-102005036039	2005 0801
DE 102005036040	A1	20060302	DE 2005-102005036040	2005 0801
AU 2005279196	A1	20060309	AU 2005-279196	2005 0823
CA 2576819	A1	20060309	CA 2005-2576819	2005 0823
CA 2576828	A1	20060309	CA 2005-2576828	2005 0823
CA 2578193	A1	20060309	CA 2005-2578193	2005 0823
WO 2006024614	A1	20060309	WO 2005-EP54135	2005 0823
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM WO 2006024615 A1 20060309 WO 2005-EP54136 2005 0823				
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EP 1781588 A1 20070509 EP 2005-787140

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KR 2007045303 A 20070502 KR 2007-704800

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NO 2007001629 A 20070328 NO 2007-1629

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NO 2007001630 A 20070328 NO 2007-1630

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PRIORITY APPLN. INFO.: <--
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 DE 2005-102005036040A 2005
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 WO 2005-EP54135 W 2005
 0823
 WO 2005-EP54136 W 2005
 0823
 WO 2005-EP54137 W 2005
 0823

OTHER SOURCE(S): MARPAT 144:274694

AB In the title process, which overcomes some or all of the drawbacks of known processes, acyclic olefins containing ≥ 2 conjugated double bonds are telomerized in the presence of nucleophiles, Group 8-10 metal catalysts, and H. Adding 536 g C4 hydrocarbons to an autoclave containing 55.9 mg Pd acetylacetonate, 0.390 mg 1,3-bis(2,4,6-trimethylphenyl)imidazolium -o-cresolate-o-cresol, 166 g MeOH, 6.72 g o-cresol, 3.47 g NaOMe, and 100 g tripropylene glycol at 80° for 14 h gave an alkyne-free C4 hydrocarbon mixture containing 1,3-butadiene 42.61, isobutane 1.77, n-butane 7.05, trans-2-butene 5.14, 1-butene 15.05, isobutene 24.800, and cis-2-butene 3.58%.

L90 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1042198 HCAPLUS Full-text

DOCUMENT NUMBER: 143:346799

TITLE: Method for hydroformylating olefins in the presence of heteroacyl phosphites.

INVENTOR(S): Borgmann, Cornelia; Selent, Detlef; Boerner, Armin; **Wiese, Klaus-Diether; Ortmann, Dagmara; Moeller, Oliver;** Hess, DieterPATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005090276	A1	20050929	WO 2005-EP50347	2005 0127

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 TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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 EP 1732872 A1 20061220 EP 2005-707865 2005
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 MX 2006PA10565 A 20061219 MX 2006-PA10565 2006
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 KR 2007007830 A 20070116 KR 2006-721657 2006
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 PRIORITY APPLN. INFO.: DE 2004-102004013514A 2004
 0319
 WO 2005-EP50347 W 2005
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OTHER SOURCE(S): MARPAT 143:346799

AB A process for hydroformylating C2-25 olefins and mixts. thereof comprises using CO and H2 in the presence of heteroacyl phosphites [I; R1-R4, Q = H, F, Cl, Br, iodo, CF3, (substituted) aliphatic, alicyclic, aryl, heteroaryl, etc.; X, Y, Z = O, imino, S; with a proviso] and Group 4-10 metal complexes thereof. Thus, hydroformylation of 1-octene in PhMe with syngas in the presence of phosphite (II) (preparation given) and [acacRh(COD)] at 100° and 50 bar for 3 h gave 70% product with 97.3% n-selectivity.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L90 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:962183 HCAPLUS Full-text

DOCUMENT NUMBER: 143:249082

TITLE: Method for the production of olefins
 comprising 8 to 12 carbon atoms

INVENTOR(S): **Wiese, Klaus-Diether**; Kaizik,
 Alfred; Maschmeyer, Dietrich; Bueschken,
 Wilfried; Schueller, Ulf

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: PCT Int. Appl., 44 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005080302	A1	20050901	WO 2004-EP53693	2004 1223
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DE 102004033410	A1	20050901	DE 2004-102004033410	2004 0708
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EP 1713749	A1	20061025	EP 2004-805021	2004 1223
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CN 1914138	A	20070214	CN 2004-80041651	2004 1223
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US 2007135665	A1	20070614	US 2007-588762	2007 0110
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PRIORITY APPLN. INFO.:			DE 2004-102004007289A	2004 0214
			DE 2004-102004033410A	2004 0708
			WO 2004-EP53693	W 2004 1223

AB The production of olefins or olefin mixts. comprising 8 to 12 carbon atoms is achieved by means of a four-stage synthesis from one or several olefins containing 4 to 6 carbon atoms. The four-stage synthesis encompasses the steps of hydroformylation to obtain aldehydes, hydrogenation to obtain alcs., dehydration to obtain 1-olefins, and metathesis. The obtained C8 to C12 olefins can be used for the production of plasticizer alcs., for example, particularly isononanol. A process flow diagram is presented.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:612314 HCAPLUS Full-text
DOCUMENT NUMBER: 143:97529

TITLE: Improved process for preparation of
organoacylphosphites by condensation of
hydroxycarboxylic acids with
phosphorous halides in the presence of
basic ion-exchange resins.

INVENTOR(S): **Ortmann, Dagmara; Wiese,
Klaus-Diether; Moeller, Oliver;
Fridag, Dirk**

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063781	A1	20050714	WO 2004-EP52675	2004 1027
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DE 10360772	A1	20050728	DE 2003-10360772	2003 1223
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EP 1697390	A1	20060906	EP 2004-820837	2004 1027
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CN 1898256	A	20070117	CN 2004-80038836	2004 1027
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MX 2006PA05977	A	20060706	MX 2006-PA5977	2006 0525
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US 2007117995	A1	20070524	US 2006-584492	2006 1208
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PRIORITY APPLN. INFO.:			DE 2003-10360772	A 2003 1223
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			WO 2004-EP52675	W 2004 1027

OTHER SOURCE(S): MARPAT 143:97529

AB Acylphosphites, preferably 2-L-5-R4-6-R3-7-R2-8-R1-benzo[e][1,3,2]-

dioxaphosphorin-4-ones (L = halide or C- or O-bound organyl; R1-R4 = (un)substituted alkyl or (hetero)aryl C1-50 groups, eventually containing ether, ketone, ester sulfide, sulfonyl, sulfoxide, sulfonamide, amino and imino functions, or eventually forming benzannelated ring systems) useful as softeners, fire protectors, UV-stabilizers, antioxidants, intermediates for preparation of pesticides or pharmaceuticals (no data), were prepared by continuous or discontinuous process comprising the reaction of hydroxycarboxylic acids, preferably of 3-R1-4-R2-5-R3-6-R4- salicylic acids with **phosphorous** halide derivs. P_{Xn}R_{3-n} (R = L, n = 2, 3) in inert solvents in the presence of weak basic ion exchange resins, preferably dialkylamino-containing styrene-divinylbenzene copolymers (e.g., Lewatit MP-62, DOWEX M-43 and Amberlyst A21), preferably at 20-100°, preferably in the presence of homogeneous weak base (e.g. N-methylpyrrolidone, methylimidazole) in base:resin molar ratio of 0.001 to 0.01. Mixed acylphosphites containing trialkyl phosphite, phosphonite or phosphinite structural fragments, 2-X10-5-R1-6-R2-7-R3-8-R4- benzo[e][1,3,2]-**dioxaphosphorin-4-ones** (same R1-R4, X1 = R5R6POQO, where Q = at least divalent organic radical) were prepared by mono-esterification of **phosphorous** halides with glycols followed by reaction with corresponding 2-chloro-1,3,2- **dioxaphosphorin-4-ones**. In an example, 2-chloro-4H-naphtho[1,2-d]-1,3,2-**dioxaphosphorin-4-on** was prepared by reaction of 0.05 mol of 1-hydroxy-2- naphthalenecarboxylic acid with 58 g of ion exchanger Lewatit MP-62 and 0.005 mol of PCl₃ in 250 mL of toluene at room temperature in 75% yield. The inventive method makes it possible to easily produce trivalent **organophosphorus** compds. such as ligands in rhodium complexes that can be used as catalysts during hydroformylation.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:612310 HCAPLUS Full-text
DOCUMENT NUMBER: 143:97527
TITLE: Improved process for preparation of organic
phosphites, phosphonites and phosphinites by
condensation of **phosphorous** halides
with organic hydroxy compounds in the presence
of basic ion exchange resins
INVENTOR(S): **Ortmann, Dagmara; Wiese,
Klaus-Diether; Moeller, Oliver;
Fridag, Dirk**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063776	A1	20050714	WO 2004-EP52729	2004 1029

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MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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MX 2006PA07258 A 20060818 MX 2006-PA7258 2006
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US 2007112219 A1 20070517 US 2006-584148 2006
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PRIORITY APPLN. INFO.: DE 2003-10360771 A 2003
1223

WO 2004-EP52729 W 2004
1029

OTHER SOURCE(S): MARPAT 143:97527

AB The **phosphorus**(III) esters PXR(OR1) (X = Cl, Br, I or OR2; R = OR3 or R, R1, R2 R3 = same or different (un)substituted C1-50 (cyclo)alkyl or aryl, optionally bound together, optionally containing amino, nitrile, ketone, aldehyde, ester, ether, silyl, amide or carbonate functions), diesters XRPOQOPXR (same X, R; Q = C1-50 (un)substituted (cyclo)alkane- or arenediyl), useful as softeners, fire protectors, UV-stabilizers and antioxidants, as well as intermediates for production of pesticides and pharmaceuticals (no data), were prepared by condensation of PXnR3-n (X = Cl, Br, I; same R; n = 1-3) with organic hydroxy compds. R1OH (same R1) or diols or biphenols HOQOH in the presence of weakly basic ion exchange resins, preferably styrene-divinylbenzene copolymers, containing dimethylamino groups (e.g., Lewatit MP-62, DOWEX M-43 or Amberlyst A21) at preferable temps. 20-100° in inert solvents with optional homogeneous basic additives, according to continuous or discontinuous protocols. In an example, 3,3'-di-tert-butyl-5,5'-dimethoxy-1,1'-biphenyl-2,2'-diyl 3,3'-di-tert-butyl-2'-hydroxy-5,5'-dimethoxy-1,1'-biphenyl-2-yl phosphite (1, 11.8 g, 93% yield) was prepared by reaction of 0.015 mol of PCl3 with 0.03 mol of 3,3'-di-tert-butyl-5,5'-dimethoxy-2,2'-biphenol in 100 mol of toluene in the presence of 26.5 g of Lewatit MP-62 at 60° for 2 h. In a comparison example, 1 was prepared in the presence of pyridine without basic resin, implying reaction with lithium phenolate and removal of the residual pyridine, as highly-viscous product in 93% yield. The inventive method permits the production of trivalent **organophosphorus** compds., which can be used e.g. as ligands in rhodium complexes that can be utilized as a catalyst in hydroformylation.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:567143 HCAPLUS Full-text
DOCUMENT NUMBER: 143:84366
TITLE: Catalyst and method for the production of
1-olefins from 2-hydroxyalkanes
INVENTOR(S): Kaizik, Alfred; Maschmeyer, Dietrich;
Wiese, Klaus-Diether; Bueschken,
Wilfried; Gaudschun, Kurt-Alfred
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005058485	A1	20050630	WO 2004-EP52607	2004 1021
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DE 10359628	A1	20050721	DE 2003-10359628	2003 1218
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EP 1694433	A1	20060830	EP 2004-791274	2004 1021
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CN 1894031	A	20070110	CN 2004-80037285	2004 1021
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US 2007043245	A1	20070222	US 2006-576302	2006 0419
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PRIORITY APPLN. INFO.:			DE 2003-10359628	A 2003 1218
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			WO 2004-EP52607	W. 2004 1021

AB The invention relates to a method for the production of 1-olefins from 2-hydroxyalkanes by means of catalytic dehydration in non-isomerizing conditions. The said catalyst comprises yttrium oxide (Y2O3), zirconium dioxide (ZrO2) and an alkali oxide and/or alkaline-earth oxide. For example, 2-octanol was catalytically dehydrolyzed in the presence of Na2O-modified ZrO2/Y2O3 catalyst at 350° to yield a mixture containing 71% 1-octene and other isomers such as 2-, 3-, and 4-octenes, 2-octanone.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:177976 HCAPLUS Full-text

DOCUMENT NUMBER: 140:237523

TITLE: Procedure for the production of aldehydes by
hydroformylation of olefins with synthesis gas
catalyzed by unmodified metal complexes of
Group VIIIB metals in the presence of alkylene
carbonates

INVENTOR(S): Moeller, Oliver; Hess, Dieter;
Wiese, Klaus-Diether; Borgmann,

PATENT ASSIGNEE(S): Cornelia
 SOURCE: Oxeno Olefinchemie G.m.b.H., Germany
 Ger. Offen., 16 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10327435	A1	20040304	DE 2003-10327435	2003 0618
CA 2506258	A1	20040325	CA 2003-2506258	2003 0807
WO 2004024661	A1	20040325	WO 2003-EP8737	2003 0807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003250219	A1	20040430	AU 2003-250219	2003 0807
EP 1532095	A1	20050525	EP 2003-794848	2003 0807
BR 2003013814	A	20050705	BR 2003-13814	2003 0807
CN 1678558	A	20051005	CN 2003-820534	2003 0807
JP 2005537330	T	20051208	JP 2004-535060	2003 0807
US 2005209489	A1	20050922	US 2004-519557	2004 1228
US 7193116	B2	20070320		
IN 2004CN03063	A	20060217	IN 2004-CN3063	2004 1231

MX 2005PA01396	A	20050428	MX 2005-PA1396	
				2005 0203
ZA 2005001710	A	20050906	ZA 2005-1710	
				2005 0228
IN 2005CN00280	A	20070907	IN 2005-CN280	
				2005 0228
PRIORITY APPLN. INFO.:			DE 2002-10240253	IA
				2002 0831
			DE 2003-10327435	A
				2003 0618
			WO 2003-EP8736	W
				2003 0807
			WO 2003-EP8737	W
				2003 0807

OTHER SOURCE(S): MARPAT 140:237523

AB Aldehydes (e.g., C13 aldehydes) are prepared in high yield and selectivity by the hydroformylation of olefins (e.g., n-butene trimer) with synthesis gas (e.g., H₂-CO mixts.) catalyzed by unmodified metal complexes of Group VIIIB metals [e.g., HRh(CO)₃] in the presence of alkylene carbonates (e.g., propylene carbonate). Process flow diagrams are presented.

L90 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:279561 HCAPLUS Full-text

DOCUMENT NUMBER: 138:304680

TITLE: Manufacture of 1-olefins with palladium carbene compounds

INVENTOR(S): Beller, Matthias; Jackstell, Ralf; Klein, Holger; Roettger, Dirk; **Wiese, Klaus-Diether**; Maschmeyer, Dietrich; Tuchlenski, Axel; Kaizik, Alfred; Santiago Fernandez, SilviaPATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Ger. Offen., 16 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 10149348	A1	20030410	DE 2001-10149348	2001 1006
CA 2462832	A1	20030417	CA 2002-2462832	2002 1001
WO 2003031379	A1	20030417	WO 2002-EP10971	

2002
1001

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG

AU 2002340959 A1 20030422 AU 2002-340959

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AU 2002340959 B2 20070802
EP 1432666 A1 20040630 EP 2002-774675

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EP 1432666 B1 20050803
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,
EE, SK
BR 2002013104 A 20040921 BR 2002-13104

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HU 2004001669 A2 20041129 HU 2004-1669

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CN 1564795 A 20050112 CN 2002-819786

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JP 2005504838 T 20050217 JP 2003-534367

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AT 301110 T 20050815 AT 2002-774675

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ES 2244808 T3 20051216 ES 2002-2774675

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TW 251586 B 20060321 TW 2002-91122819

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US 2004242947 A1 20041202 US 2004-490038

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MX 2004PA03106 A 20040727 MX 2004-PA3106

2004
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NO 2004001866 A 20040506 NO 2004-1866

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0506

PRIORITY APPLN. INFO.:

<--
 DE 2001-10149348 A
 2001
 1006
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 WO 2002-EP10971 W
 2002
 1001
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OTHER SOURCE(S): MARPAT 138:304680

AB C8-18 1-Olefins, useful as monomers, are manufactured by telomerization of compds. containing conjugated double bonds with a nucleophilic reagent as telogen in the presence of Pd carbene complex as telomerization catalyst, followed by hydrogenation of the telomer and bond cleavage of the hydrogenated intermediates. The Pd carbene complex catalysts are formed from Pd compds. and ligands comprising N-C-N structures, e.g., imidazolines or imidazolidines. For example, telomerization of 1,3-butadiene with MeOH, in the presence of a catalyst formed in situ from Pd acetylacetonate and 1,3-bis(2,4,6-trimethylphenyl)imidazolium chloride gave 1-methoxy-2,7-octadiene. Hydrogenation of the latter gave Me octyl ether which was subjected with bond cleavage in the presence of alkali-modified Al₂O₃ (1% Na₂O) to give 1-octene.

I90 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:610343 HCAPLUS Full-text

DOCUMENT NUMBER: 137:155283

TITLE: Three-step preparation of C7-24
 α -olefins from C4-21 aldehydes and
 acetone

INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann,
 Guido; Kaizik, Alfred; Bueschken, Wilfried

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
EP 1231194	A1	20020814	EP 2002-931	2002 0116

<--

EP 1231194 B1 20031112
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
 MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 DE 10147775 A1 20020814 DE 2001-10147775

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0927

<--

US 2002169347 A1 20021114 US 2002-67924

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0208

<--

US 6627782 B2 20030930

PRIORITY APPLN. INFO.:

DE 2001-10106185 A
 2001
 0210
 <--

DE 2001-10147775 A
 2001
 0927
 <--

AB A three-step preparation of C7-24 α -olefins, which are claimed useful as comonomers, from C4-21 aldehydes and acetone comprises: (1) the aldol condensation of acetone with a C4-21 aldehyde (e.g., n-pentanal) to give an α,β -unsatd. ketone (e.g., 3-octen-2-one); (2) hydrogenation of the α,β -unsatd. ketone into a saturated alc. (e.g., 2-octanol); and (3) dehydration of the saturated alc. into an α -olefin (e.g., 1-octene). A process flow diagram is presented.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:253009 HCAPLUS Full-text

DOCUMENT NUMBER: 136:281147

TITLE: Stabilization of rhodium catalysts for the hydroformylation of olefins

INVENTOR(S): **Wiese, Klaus-Diether**; Trocha, Martin; Roettger, Dirk; Toetsch, Walter; Kaizik, Alfred; Bueschken, Wilfried

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193239	A1	20020403	EP 2001-119282	2001 0810
<--				
EP 1193239	B1	20041208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10048301	A1	20020411	DE 2000-10048301	2000 0929
<--				
AT 284375	T	20041215	AT 2001-119282	2001 0810
<--				
ES 2231358	T3	20050516	ES 2001-1119282	2001 0810
<--				
SG 94863	A1	20030318	SG 2001-5593	2001 0912
<--				
US 2002065437	A1	20020530	US 2001-960936	2001 0925
<--				
US 6500991	B2	20021231		
TW 224094	B	20041121	TW 2001-90123565	2001 0925
<--				
CA 2357856	A1	20020329	CA 2001-2357856	2001 0927
<--				
MX 2001PA09756	A	20020415	MX 2001-PA9756	

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BR 2001004335 A 20020507 <--
BR 2001-4335

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CN 1346821 A 20020501 <--
CN 2001-141119

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ZA 2001007977 A 20020529 <--
ZA 2001-7977

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JP 2002161063 A 20020604 <--
JP 2001-300783

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RU 2270829 C2 20060227 <--
RU 2001-126325

2001
0928

PRIORITY APPLN. INFO.: <--
DE 2000-10048301 A

2000
0929

AB Deactivation of the title catalysts in the production of C3-21 aldehydes is largely suppressed by separating the reactor effluent into a gas and a liquid phase, separating the liquid phase into an overhead fraction containing aldehydes and unreacted olefins and a sump fraction containing Rh catalyst, and treating the cooled sump fraction with a gas containing CO. Hydroformylation of di-n-butene (5 kg/h) with 1:1 CO-H (2 kg/h) over Rh octanoate/tris(2,4-di-tert-butylphenyl) phosphite (30-90 ppm Rh) at 130°/50 bar, removing the catalyst when the conversion fell to <95%, cooling the catalyst to 60°, and returning the catalyst to the reactor required the addition of 0.9 g Rh/ton reacted olefin to restore initial activity; vs. 2.1 g/ton when the catalyst was not cooled.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:941593 HCAPLUS Full-text

DOCUMENT NUMBER: 138:25097

TITLE: Procedure and catalysts for telomerization of
noncyclic olefins

INVENTOR(S): Roettger, Dirk; Beller, Matthias; Jackstell,
Ralf; Klein, Holger; **Wiese,**
Klaus-Diether

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Ger. Offen., 14 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 10128144	A1	20021212	DE 2001-10128144	

2001
0609

CA 2449994	A1	20021219	CA 2002-2449994	
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2002
0504

WO 2002100803 A2 20021219 WO 2002-EP4909 <--
2002
0504

WO 2002100803 A3 20040212 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2002312879 A1 20021223 AU 2002-312879 <--
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EP 1406852 A2 20040414 EP 2002-738032 <--
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EP 1406852 B1 20041110 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
BR 2002010253 A 20040622 BR 2002-10253 <--
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CN 1541197 A 20041027 CN 2002-811612 <--
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JP 2004534059 T 20041111 JP 2003-503574 <--
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AT 282017 T 20041115 AT 2002-738032 <--
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HU 2004000235 A2 20041228 HU 2004-235 <--
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HU 2004000235 A3 20061128 <--
ES 2230498 T3 20050501 ES 2002-2738032 <--
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TW 591011 B 20040611 TW 2002-91112138 <--
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EG 23330 A 20041229 EG 2002-608 <--
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MX 2003PA11204 A 20040226 MX 2003-PA11204 <--
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US 2005038273 A1 20050217 US 2003-478697 <--
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US 7026523 B2 20060411 <--
 PRIORITY APPLN. INFO.: DE 2001-10128144 A
 2001
 0609
 <--
 WO 2002-EP4909 W
 2002
 0504
 <--

OTHER SOURCE(S): MARPAT 138:25097

AB Noncyclic olefins with ≥ 2 conjugated double bonds or mixts. of such olefins, with nucleophiles are polymerized with Pd carbene complexes as catalysts. For example, telomerization of 2 mol butadiene with 1 mol MeOH at 90° in the presence of 1 mol.% of a base (NaOH or Et3N) and 0.01 mol.% Pd (as catalyst I) gave $\geq 98\%$ telomer CH2:CH(CH2)3CH:CHCH2OMe.

L90 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:396480 HCAPLUS Full-text

DOCUMENT NUMBER: 135:7149

TITLE: Process for carrying out aldol condensations

INVENTOR(S): Protzmann, Guido; **Wiese, Klaus-Diether**
; Buschken, WilfriedPATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1103538	A1	20010530	EP 2000-121938	2000 1009
EP 1103538	B1	20030528		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19956410	A1	20010531	DE 1999-19956410	1999 1124
TW 226884	B	20050121	TW 2000-89119310	2000 0920
AT 241582	T	20030615	AT 2000-121938	2000 1009
ES 2195828	T3	20031216	ES 2000-121938	2000 1009
MX 2000PA11268	A	20020523	MX 2000-PA11268	2000 1116
JP 2001151703	A	20010605	JP 2000-354679	2000 1121

SG 90201	A1	20020723	SG 2000-6742	<--	2000
					1121
PL 193274	B1	20070131	PL 2000-343990	<--	2000
					1121
CA 2326779	A1	20010524	CA 2000-2326779	<--	2000
					1122
US 6433230	B1	20020813	US 2000-716941	<--	2000
					1122
ZA 2000006868	A	20010605	ZA 2000-6868	<--	2000
					1123
CN 1297879	A	20010606	CN 2000-128456	<--	2000
					1123
IN 2000MA00997	A	20050520	IN 2000-MA997	<--	2000
					1123
BR 2000005559	A	20010703	BR 2000-5559	<--	2000
					1124
PRIORITY APPLN. INFO.:			DE 1999-19956410	A	1999
					1124
AB	<p>α,β-Unsatd. keto compds. are manufactured by base-catalyzed aldol condensation of C1-15 aldehydes and/or ketones in the presence of aqueous catalyst solns., under adiabatic reaction conditions. The reaction products are subjected to a short distillation in order to sep. H₂O, aldehydes and/or ketones as head products and α,β-unsatd. compds. and catalyst-containing aqueous phase as sump products. Thus, 2-propyl-2-heptenal was manufactured from pentanal in the presence of aqueous NaOH.</p>				
REFERENCE COUNT:	4	THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT			
L90	ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN				
ACCESSION NUMBER:	2001:437023 HCAPLUS <u>Full-text</u>				
DOCUMENT NUMBER:	135:34562				
TITLE:	Status and future aspects of industrial hydroformylation				
AUTHOR(S):	Protzmann, Guido; Wiese, Klaus-Diether				
CORPORATE SOURCE:	OXENO Olefinchemie GmbH, Marl, Germany				
SOURCE:	Erdoel, Erdgas, Kohle (2001), 117(5), 235-240				
	CODEN: EEKOEY; ISSN: 0179-3187				
PUBLISHER:	Urban-Verlag				
DOCUMENT TYPE:	Journal; General Review				
LANGUAGE:	English				
AB	<p>A review with 19 refs. Since the discovery of hydroformylation more than 60 yr ago, a vary large demand for aldehydes has developed. Today, aldehydes having chain lengths of 2-18 carbon atoms are produced. The reaction of propene to butanal plays the most important role here. Competition is very harsh in these markets because of overcapacities and alternative products. The most active catalyst systems are Rh complexes modified with phosphorus-containing ligands. Attempts are being made to</p>				

utilize these systems, which have become established for the production of butanal, for industrial processes for the reaction of longer-chain olefins. Industrial research is being increasingly concentrated, with fewer and fewer companies carrying out most of the work. The focus of industrial research is the development and handling of catalysts. There is interest in the development of two-phase reactions.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L90 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:865164 HCAPLUS Full-text
DOCUMENT NUMBER: 134:30876
TITLE: Tubular reactor for multiphase vinylation of
carboxylic acids for preparation of carboxylic
acid vinyl esters
INVENTOR(S): **Wiese, Klaus-Diether**; Olbrich, Paul
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
EP 1057525	A2	20001206	EP 2000-109784	2000 0509
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EP 1057525	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19925385	A1	20001207	DE 1999-19925385	1999 0602
<--				
JP 2001019660	A	20010123	JP 2000-160521	2000 0530
<--				
CA 2310512	A1	20001202	CA 2000-2310512	2000 0531
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SG 85706	A1	20020115	SG 2000-2944	2000 0531
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US 6500979	B1	20021231	US 2000-583776	2000 0531
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ZA 2000002739	A	20001211	ZA 2000-2739	2000 0601
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BR 2000002555	A	20010102	BR 2000-2555	2000 0601
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CN 1290684	A	20010411	CN 2000-131741	2000 0601
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MX 2000PA05432	A	20020604	MX 2000-PA5432	

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TW 523423 B 20030311 TW 2000-89110686
2000
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HK 1036051 A1 20050819 HK 2001-106774
2001
0925
PRIORITY APPLN. INFO.: DE 1999-19925385 A
1999
0602

AB Multiphase vinylation of carboxylic acids (i.e., C2-16-carboxylic acids) by reaction with acetylene is carried out in a tubular reactor, in which the catalyst is in the continuous phase and at least one educt (of a reactant) is in the dispersed phase, and in which the load factor, B, of the tubular reactor is ≥ 0.8 . The two phases are present at a $>2:1$ continuous phase to dispersed phase. The catalyst is typically the metal salt of a carboxylic acid, especially the zinc salt. The product vinyl esters can be used for the manufacture of homopolymers and copolymers (e.g., in the manufacture of adhesives).

L90 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:865163 HCAPLUS Full-text
DOCUMENT NUMBER: 134:30875
TITLE: Tubular reactor for multiphase hydroformylation of alkenes for production of aldehydes
INVENTOR(S): Wiese, Klaus-Diether; Protzmann, Guido; Koch, Jurgen; Rottger, Dirk; Trocha, Martin
PATENT ASSIGNEE(S): Oxeno Olefinchemie G.m.b.H., Germany
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 1057524	A2	20001206	EP 2000-108156	2000 0413
EP 1057524	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19925384	A1	20001207	DE 1999-19925384	1999 0602
MX 200001215	A	20020424	MX 2000-1215	2000 0203
TW 537930	B	20030621	TW 2000-89107681	2000 0424
JP 2001026566	A	20010130	JP 2000-160516	2000

CA 2310516 A1 20001202 CA 2000-2310516 0530
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BR 2000002178 A 20010102 BR 2000-2178 2000
0531
SG 86401 A1 20020219 SG 2000-2945 2000
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ZA 2000002740 A 20001211 ZA 2000-2740 2000
0601
CN 1276364 A 20001213 CN 2000-108799 2000
0601
RO 121180 B1 20070130 RO 2000-568 2000
0601
US 6492564 B1 20021210 US 2000-585425 2000
0602
PRIORITY APPLN. INFO.: DE 1999-19925384 A 1999
0602

AB Multiphase hydroformylation of olefins (i.e., C2-25-olefins) is carried out in a tubular reactor, in which the catalyst is in the continuous phase and at least one educt (of a reactant) is in the dispersed phase, and in which the load factor, B, of the tubular reactor is ≥ 0.8 . The continuous phase is composed of water or a mixture of water with an organic solvent; the two phases are present at a $>2:1$ continuous phase to dispersed phase. The catalyst is typically a complex of Group 8 elements, especially rhodium. The product aldehydes can be used for the manufacture of alcs., carboxylic acids, or aldol condensation products.

L90 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:592387 HCAPLUS Full-text
DOCUMENT NUMBER: 133:194951
TITLE: Process for fractionating dibutene and use of the resulting fractions
INVENTOR(S): **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1029839	A1	20000823	EP 1999-126213	1999 1230

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,

MC, PT, IE, SI, LT, LV, FI, RO				
DE 19906518	A1	20000831	DE 1999-19906518	1999 0217
			<--	
MX 200001451	A	20020308	MX 2000-1451	2000 0210
			<--	
SG 89317	A1	20020618	SG 2000-798	2000 0214
			<--	
TW 491827	B	20020621	TW 2000-89102415	2000 0214
			<--	
CA 2298871	A1	20000817	CA 2000-2298871	2000 0215
			<--	
JP 2000239196	A	20000905	JP 2000-38350	2000 0216
			<--	
ZA 2000000733	A	20000908	ZA 2000-733	2000 0216
			<--	
KR 2000058062	A	20000925	KR 2000-7261	2000 0216
			<--	
BR 2000000487	A	20000912	BR 2000-487	2000 0217
			<--	
CN 1266835	A	20000920	CN 2000-102371	2000 0217
			<--	
US 6433242	B1	20020813	US 2000-505673	2000 0217
			<--	
PRIORITY APPLN. INFO.:			DE 1999-19906518	A 1999 0217
			<--	

AB Dibutene is separated, preferably by continuous distillation at atmospheric pressure, into a heavier fraction (containing the n-octenes) with iso index <90% that of the dibutene feed and a lighter fraction (containing the dimethylhexenes) with iso index >110% that of the dibutene feed, where the iso index is the average number of branches in the mols. in the mixture. The dibutene used was formed by dimerization of 2-butene over a fixed bed of Ni catalyst (Octol process). The products can be converted into C9 acids by carboxylation and C9 alcs. (useful in plasticizer manufacture) via hydroformylation, and the dimethylhexene-containing fraction, after hydrogenation, can be used as a fuel component. Properties of the C9 alcs. and of polymers of the vinyl esters of the C9 acids from the 2 sep. C8 alkene fractions were compared with those of the analogous compound mixts. from the unsepd. dibutene mixture

L90 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2000:607377 HCAPLUS Full-text
 DOCUMENT NUMBER: 133:208302
 TITLE: Process for the manufacture of vinyl esters
 from butene oligomers

INVENTOR(S): **Wiese, Klaus-Diether; Olbrich, Paul;**
Gabriel, Juergen
 PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
 SOURCE: **Ger. Offen., 8 pp.**
 CODEN: GWXXBX
 DOCUMENT TYPE: **Patent**
 LANGUAGE: **German**
 FAMILY ACC. NUM. COUNT: **1**
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 19908320	A1	20000831	DE 1999-19908320	1999 0226
NO 2000000872	A	20000828	<-- NO 2000-872	2000 0222
EP 1033360	A1	20000906	<-- EP 2000-103784	2000 0223
EP 1033360	B1	20030917	<--	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
ES 2204373	T3	20040501	ES 2000-103784	2000 0223
MX 200001956	A	20020308	<-- MX 2000-1956	2000 0224
CA 2299587	A1	20000826	<-- CA 2000-2299587	2000 0225
JP 2000248017	A	20000912	<-- JP 2000-49560	2000 0225
KR 2000058191	A	20000925	<-- KR 2000-9301	2000 0225
CN 1269352	A	20001011	<-- CN 2000-108619	2000 0225
ZA 2000000927	A	20001016	<-- ZA 2000-927	2000 0225
SG 82685	A1	20010821	<-- SG 2000-1047	2000 0225
TW 482760	B	20020411	<-- TW 2000-89103521	2000 0225
BR 2000000963	A	20000919	<-- BR 2000-963	2000 0228

AB Butene is oligomerized, the butene oligomers are separated, converted to carboxylic acids with 1 addnl. C atom (e.g., by hydroformylation followed by oxidation), and the acids are converted to their vinyl esters (e.g., by reaction with acetylene). The butene oligomers are especially di-, tri- and tetrabutene. The vinyl esters are used as plasticizers or as comonomers in polymerization reactions.

L90 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1970:110301 HCAPLUS Full-text
DOCUMENT NUMBER: 72:110301
ORIGINAL REFERENCE NO.: 72:19909a,19912a
TITLE: Plant nutrient availability in soils. II.
Quantity-intensity relations of
phosphorus and manganese as influenced
by soil pH

AUTHOR(S): Lamm, Carl G.; Tjell, J. Chr.; Moeller, O.; Christiansen, T. F.

CORPORATE SOURCE: Chem. Lab. A, Tech. Univ. Denmark, Lyngby, Den.

SOURCE: Acta Agriculturae Scandinavica (1969
, 19(2-3), 135-40
CODEN: AASCAU; ISSN: 0001-5121

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The Q-I relations were tested with regard to P and Mn on soils sampled from a field lime experiment at the Virumgaard Experiment Station. The values of the differential capacity parameters obtained at various soil pH values are explained by assuming the ion exchanging sites of the soil colloids to behave as weak acids or bases. Thus, by increasing pH, the cation exchange properties increase, but the anion exchange properties decrease. The latter decrease may, however, be counteracted by polyvalent cations being electrostatically bound to cation exchanging sites or coordinatively bound to ligands, such as neutral amino groups. The various availability parameters are discussed.

STRUCTURE SEARCH RESULTS

=> d his 189

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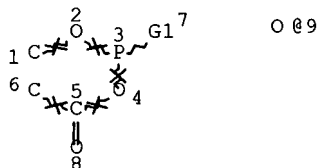
L89

4 S L42 NOT L88

=> d que stat 189

L9

STR



VAR G1=C/9/X

NODE ATTRIBUTES:

CONNECT IS E2 RC AT 9

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

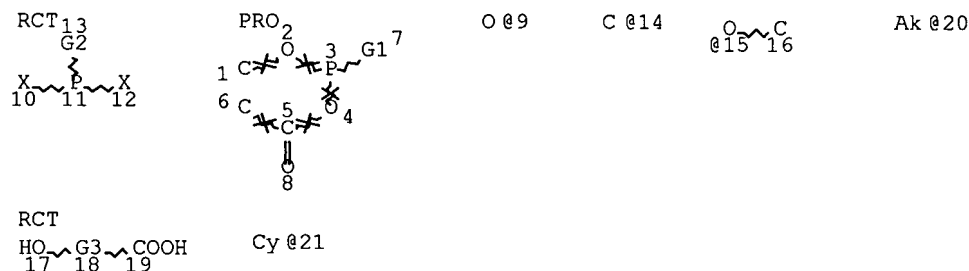
STEREO ATTRIBUTES: NONE

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L21 QUE ABB=ON PLU=ON PY<20043 OR PRY<2004 OR AY<2004 OR MY<2004 OR REVIEW/DT

L36 161 SEA FILE=CASREACT ABB=ON PLU=ON L11/PRO

L38 STR



VAR G1=C/9/X

VAR G2=14/15

VAR G3=20/21

NODE ATTRIBUTES:

NSPEC IS RC AT 14

NSPEC IS RC AT 16

CONNECT IS E2 RC AT 9

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

L41 4 SEA FILE=CASREACT SUB=L36 SSS FUL L38 (6 REACTIONS)
 L42 4 SEA FILE=CASREACT ABB=ON PLU=ON L41 AND L21
 L54 70 SEA FILE=HCAPLUS ABB=ON PLU=ON "OXENO OLEFINCHEMIE G M B H GERMANY"/PA,CS,SO,CO
 L56 QUE ABB=ON PLU=ON FRIDAG D?/AU
 L57 QUE ABB=ON PLU=ON MOELLER O?/AU
 L58 QUE ABB=ON PLU=ON MOLLER O?/AU
 L59 QUE ABB=ON PLU=ON ORTMANN D?/AU
 L60 QUE ABB=ON PLU=ON ("WIESE K"/AU OR "WIESE K D"/AU OR "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE KLAUS DIETHER"/AU)
 L82 21 SEA FILE=CASREACT ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE, KLAUS-DIETHER"/AU)
 L83 30 SEA FILE=CASREACT ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)
 L84 30 SEA FILE=CASREACT ABB=ON PLU=ON L82 OR L83
 L85 8 SEA FILE=CASREACT ABB=ON PLU=ON L84 AND L54
 L86 10 SEA FILE=CASREACT ABB=ON PLU=ON L84 AND ?PHOSPHOR?
 L87 15 SEA FILE=CASREACT ABB=ON PLU=ON (L85 OR L86)
 L88 15 SEA FILE=CASREACT ABB=ON PLU=ON L87 AND L21
 L89 4 SEA FILE=CASREACT ABB=ON PLU=ON L42 NOT L88

=> d his l81

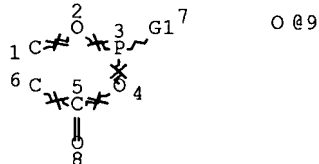
(FILE 'HCAPLUS' ENTERED AT 11:45:12 ON 23 OCT 2007)

SAV L80 NWA492HCP/A

L81 27 S L80 NOT L66

=> d que stat l81

L9 STR



VAR G1=C/9/X

NODE ATTRIBUTES:

CONNECT IS E2 RC AT 9

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

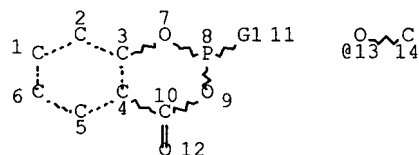
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NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L11 1315 SEA FILE=REGISTRY SSS FUL L9

L12 STR

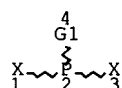


VAR G1=C/13/X
 NODE ATTRIBUTES:
 NSPEC IS RC AT 14
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L14 261 SEA FILE=REGISTRY SUB=L11 SSS FUL L12
 L17 284 SEA FILE=HCAPLUS ABB=ON PLU=ON L14
 L18 99 SEA FILE=HCAPLUS ABB=ON PLU=ON L14/P
 L19 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 /DP
 L20 99 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 OR L19
 L21 QUE ABB=ON PLU=ON PY<20043 OR PRY<2004 OR AY<2004 OR
 MY<2004 OR REVIEW/DT
 L23 99 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L21
 L24 QUE ABB=ON PLU=ON PRODUC? OR PROD# OR GENERAT? OR MA
 NUF? OR MFR# OR CREAT? OR FORM## OR FORMING# OR FORMAT?
 OR MAKE# OR MADE# OR MAKIN# OR FABRICAT? OR SYNTHESI?
 OR PREPAR? OR PREP#
 L25 272 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND L24
 L28 STR



C @5



VAR G1=5/6
 NODE ATTRIBUTES:
 NSPEC IS RC AT 5
 NSPEC IS RC AT 7
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L44 11759 SEA FILE=REGISTRY SSS FUL L28
 L45 14505 SEA FILE=HCAPLUS ABB=ON PLU=ON L44
 L46 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L45 AND L17
 L47 8585 SEA FILE=HCAPLUS ABB=ON PLU=ON L44/RCT
 L48 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 AND L20
 L50 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L25 AND L45
 L51 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 OR L48 OR L50
 L52 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND L21
 L53 55 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR
 "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR
 "WIESE, KLAUS-DIETHER"/AU)
 L54 70 SEA FILE=HCAPLUS ABB=ON PLU=ON "OXENO OLEFINCHEMIE G
 M B H GERMANY"/PA,CS,SO,CO
 L55 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND L54
 L56 QUE ABB=ON PLU=ON FRIDAG D?/AU
 L57 QUE ABB=ON PLU=ON MOELLER O?/AU
 L58 QUE ABB=ON PLU=ON MOLLER O?/AU
 L59 QUE ABB=ON PLU=ON ORTMANN D?/AU
 L60 QUE ABB=ON PLU=ON ("WIESE K"/AU OR "WIESE K D"/AU OR
 "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE

KLAUS DIETHER"/AU)

L62	203	SEA FILE=HCAPLUS ABB=ON	PLU=ON	(L56 OR L57 OR L58 OR L59 OR L60)
L63	25	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L62 AND L54
L64	16	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L62 AND ?PHOSPHOR?
L65	34	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L55 OR L63 OR L64
L66	34	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L65 AND L21
L67	25	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L52 NOT L66
L71		QUE ABB=ON	PLU=ON	29/SC,SX
L72		QUE ABB=ON	PLU=ON	45/SC,SX
L73	2	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L23 AND L72
L74	3	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L25 AND L72
L75	87	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L25 AND L71
L76	49	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L23 AND L71
L77	2	SEA FILE=HCAPLUS ABB=ON	PLU=ON	(L73 OR L74) AND (L75 OR L76)
L78	3	SEA FILE=HCAPLUS ABB=ON	PLU=ON	(L73 OR L74) OR L77
L79	3	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L78 AND L21
L80	28	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L79 OR L67
L81	27	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L80 NOT L66

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FILE 'CASREACT' ENTERED AT 12:03:45 ON 23 OCT 2007
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 PROCESSING COMPLETED FOR L89
 PROCESSING COMPLETED FOR L81

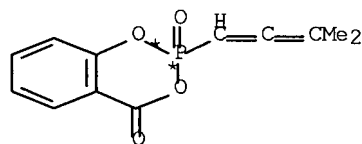
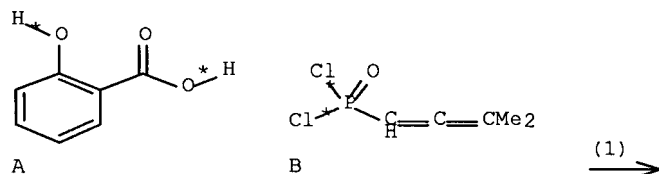
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 ANSWERS '1-4' FROM FILE CASREACT
 ANSWERS '5-30' FROM FILE HCAPLUS

=> d 191 1-4 ibib ab fhit

L91 ANSWER 1 OF 30 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 1
 ACCESSION NUMBER: 134:280921 CASREACT Full-text
 TITLE: New phosphorus derivatives of salicylic acid
 AUTHOR(S): Enchev, Dobromir D.
 CORPORATE SOURCE: Department of Organic Chemistry, Faculty of Chemistry, "Bishop Konstantin Preslavski" University, Shoumen, 9700, Bulg.
 SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (2000), 165, 243-248
 CODEN: PSSLEC; ISSN: 1042-6507
 PUBLISHER: Gordon & Breach Science Publishers
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The chemical of phosphorus derivs. of salicylic acid has been revived and the synthesis of alkadienephosphonate derivs. of salicylic acid is reported. Thus, reaction of salicylic acid with $RR_1C:C:CHP(O)Cl_2$ ($R = Me, R_1 = Me, Et$; $RR_1 = (CH_2)_5$) gave alkadienephosphonates I.

RX(1) OF 8 A + B ==> C



C
 YIELD 72%

RX(1) RCT A 69-72-7, B 13337-33-2
 RGT D 121-44-8 Et3N
 PRO C 332926-48-4
 SOL 71-43-2 Benzene

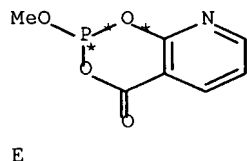
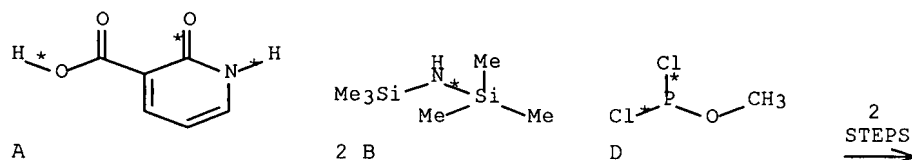
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 2 OF 30 CASREACT COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 142:392466 CASREACT Full-text
 TITLE: Reaction of 2-methoxy-1,3,2-dioxaphosphorino[4,5-b]pyridin-4(4H)-one with

hexafluoroacetone
 AUTHOR(S): Mironov, V. F.; Burnaeva, L. M.; Litvinov, I. A.; Kotorova, Yu. Yu.; Dobrynin, A. B.; Musin, R. Z.; Konovalova, I. V.
 CORPORATE SOURCE: Kazan State University, Kazan, 420008, Russia
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2004), 53(8), 1704-1710
 CODEN: RCBUEY; ISSN: 1066-5285
 PUBLISHER: Springer Science+Business Media, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Ring expansion of 2-methoxypyridino[3,2-e]-1,3,2-dioxaphosphorin-4-one (3) by reaction with hexafluoroacetone gave pyridino[3,2-f]-1,3,2-dioxaphosphepins I, and after hydrolysis, 3-acyl-2-pyridone derivs. The reaction of 2-trimethylsiloxynicotinic acid trimethylsilyl ester (2) with MeOPCl₂ gave compound 3, which upon reaction with CF₃COCF₃ gave unstable cyclic phosphate, pyridino-1,3,2-dioxaphosphepin-5-one 2-oxide, which transfers Me group onto pyridine ring giving I (6, R = Me) or undergoes partial hydrolysis to give pyridinium inner salt (7, shown as I, R = H). Complete hydrolysis of the reaction mixture gave 1-methyl-3-(2-hydroxy-3,3,3-trifluoro-2-trifluoromethylpropanoyl)-2(1H)-pyridinone (8) and its 1-hydro-analog (9). Crystal structure of 8 is reported.

RX(5) OF 10 COMPOSED OF RX(1), RX(2)
 RX(5) A + 2 B + D ==> E



RX(1) RCT A 609-71-2, B 999-97-3
 PRO C 183274-22-8
 CON 7 hours, 150 deg C
 NTE thermal

RX(2) RCT C 183274-22-8, D 3279-26-3
 PRO E 849790-20-1
 CON SUBSTAGE(1) 20 deg C
 SUBSTAGE(2) 20 deg C -> 50 deg C

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L91 ANSWER 3 OF 30 CASREACT COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 137:353111 CASREACT Full-text

TITLE: Practical Synthesis of 3-Carboxy-(2R)-
[[hydroxy[(tetradecyl)oxy]phosphinyl]oxy]-
N,N,N-trimethyl-1-propanaminium Hydroxide
Inner Salt (CPI975): A Carnitine
Palmitoyltransferase I Inhibitor

AUTHOR(S): Prashad, Mahavir; Amedio, John C.; Ciszewski,
Lech; Lee, George; Villa, Carmine; Chen,
Kau-Ming; Prasad, Kapa; Repic, Oljan

CORPORATE SOURCE: Process R D Chemical and Analytical
Development, Novartis Institute for Biomedical
Research One Health Plaza, East Hanover, NJ,
07936, USA

SOURCE: Organic Process Research & Development (
2002), 6(6), 773-776

CODEN: OPRDFK; ISSN: 1083-6160

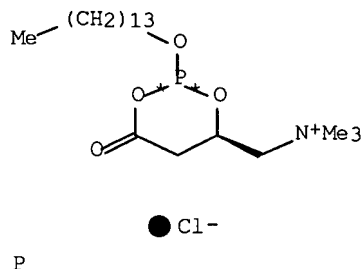
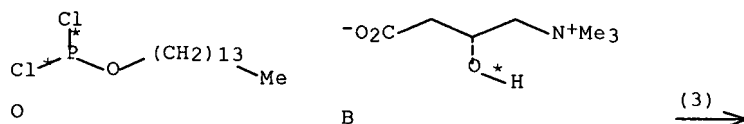
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The preparation of 3-carboxy-(2R)-[[hydroxy[(tetradecyl)oxy]phosphinyl] oxy]-N,N,N-trimethyl-1-propanaminium hydroxide inner salt (1, CPI975), a carnitine palmitoyltransferase I inhibitor, is described. The reaction of 1-tetradecanol (2) with stoichiometric amts. of PCl_3 in THF at -15 to -20° furnished 1-tetradecyl phosphorochloridate (3). Treatment of 3 directly with L-carnitine (7) in THF in the presence of 2,4,6-collidine, followed by oxidization with bromine, afforded a crude aqueous solution of 1. Desalting was done using a cheap, stable, and recyclable resin Amberlite XAD-4. The drug substance was purified by recrystn. from a mixture of ethanol and THF. The yield of 1 was 65% with 99.7% purity. Alternatively, instead of desalting with Amberlite XAD-4 resin, 1 can be isolated by an extraction with 1-decanol, followed by precipitation with acetone and recrystn. from ethanol and THF mixture

RX(3) OF 4 ...O + B ==> P



RX(3) RCT O 167685-49-6, B 541-15-1

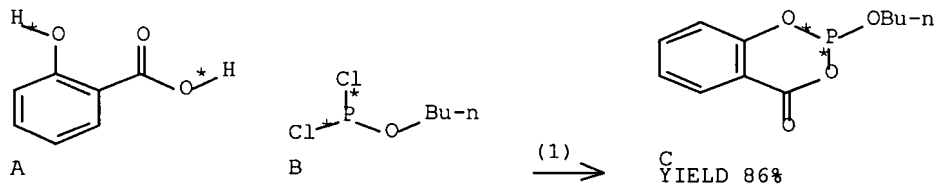
RGT E 108-75-8 s-Collidine
 PRO P 474920-74-6
 SOL 109-99-9 THF
 NTE scalable

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L91 ANSWER 4 OF 30 CASREACT COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 49:23948 CASREACT Full-text
 TITLE: Reaction product of phosphorus trichloride
 with salicylic acid
 AUTHOR(S): Cade, J. A.; Gerrard, W.
 CORPORATE SOURCE: Northern Polytech., London
 SOURCE: Chemistry & Industry (London, United Kingdom)
 (1954) 402
 CODEN: CHINAG; ISSN: 0009-3068
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable

AB Further evidence indicates that the reaction product (I) is the phosphorochloridite o-C₆H₄.O.PCl.O.CO. I is prepared in 85% yield from 1 mole PCl₃, 1 mole salicylic acid, and 1 mole pyridine in Et₂O at -10°, and b₉ 123-5°. BuOH (1 mole), 1 mole pyridine, and 1 mole I, in Et₂O at -10° yield 93% of a compound (II), b_{0.03} 99-100°, n_D20 1.5250, identical with the reaction product of 1 mole BuOPCl₂, 1 mole salicylic acid, and 2 moles pyridine in Et₂O at -10° (b_{0.0} 97-9°, yield 86%). II is believed to be o-C₆H₄.O.POO.CO.

RX(1) OF 1 A + B ==> C



RX(1) RCT A 69-72-7, B 10496-13-6
 RGT D 110-86-1 Pyridine
 PRO C 109017-74-5
 SOL 60-29-7 Et₂O
 NTE Classification: Heterocycle formation;
 O-Phosphorisation; Condensation; # Conditions: pyridine
 Et₂O; -10 deg

=> d 191 5-30 ibib ed abs hitstr hitind

L91 ANSWER 5 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2006:437529 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:450875
 TITLE: Preparation of therapeutic
 furopyrimidine and thienopyrimidine
 nucleosides as antitumor and antiviral agents
 INVENTOR(S): Babu, Yarlagadda S.; Chand, Pooran; Wu,
 Minwan; Kotian, Pravin L.; Kumar, V. Satish;
 Lin, Tsu-Hsing; El-Kattan, Yahya; Ghosh, Ajit

K.
 PATENT ASSIGNEE(S): Biocryst Pharmaceuticals, Inc., USA
 SOURCE: PCT Int. Appl., 152 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006050161	A2	20060511	WO 2005-US39072	2005 1028
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
AU 2005302448	A1	20060511	AU 2005-302448	2005 1028
CA 2585079	A1	20060511	CA 2005-2585079	2005 1028
EP 1814561	A2	20070808	EP 2005-820258	2005 1028
US 2006165655	A1	20060727	US 2006-332858	2006 0116
WO 2006104945	A2	20061005	WO 2006-US10948	2006 0323
WO 2006104945	A3	20070208		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 2006234963	A1	20061019	US 2006-388060	

2006
0323

IN 2007KN01720 A 20070727 IN 2007-KN1720

2007
0515

PRIORITY APPLN. INFO.:

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US 2004-623065P P

2004
1029

US 2005-641754P P

2005
0107

US 2005-665832P P

2005
0329

US 2005-692572P P

2005
0622

US 2005-728215P P

2005
1019

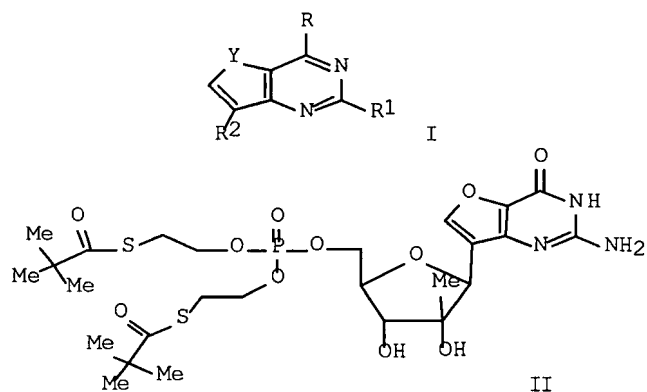
WO 2005-US39072 W

2005
1028

OTHER SOURCE(S): MARPAT 144:450875

ED Entered STN: 11 May 2006

GI



AB Furopyrimidine and thienopyrimidine nucleosides I, wherein Y is O, S; R is OR₃, SR₃, NR₃R₄, NR₃NR₄R₅, alkyl, alkenyl, alkynyl, aryl, (CH₂)_n-CH(NHR₃)CO₂R₄, (CH₂)_n-S-alkyl, (CH₂)_n-S-aryl, Cl, F, Br, I, CN, COOR₃, CONR₃R₄, NHC(=NR₃)NHR₄, NR₃OR₄, NR₃NO, NHCONHR₃, NR₃N=NR₄, NR₃N=CHR₄, NR₃C(O)NR₄R₅, NR₃C(S)-NR₄R₅, NR₃C(O)OR₄, CH=N-OR₃, NR₃C(=NH)NR₄R₅, NR₃C(O)NR₄NR₅R₆, O-C(O)R₃, OC(O)-OR₃, ONH-C(O)O-alkyl, ONHC(O)O-aryl, ONR₃R₄, SNR₃R₄, S-ONR₃R₄, or SONR₃R₄; n is 0-5; R₁ is H, NR₃R₄, Cl, F, OR₃, SR₃, NHCOR₃, NHSO₂R₃, NHCONHR₃, CN, alkyl, aryl, ONR₃R₄, or NRC₃(O)OR₄; R₂ is a nucleoside sugar group; and R₃-R₆ are independently H, alkyl, alkenyl, alkynyl, cycloalkyl,

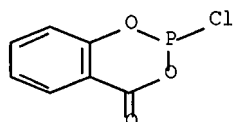
heterocyclic, aryl, acyl, SO₂-alkyl and NO; or R₃ and R₄ together with the nitrogen to which they are attached **form** a pyrrolidino, piperidino, piperazino, azetidino, morpholino, or thio-morpholino ring; were **prepd** . and used as antitumor and antiviral agent. Title compds. are useful as antiviral agents, anticancer agents, and RNA or DNA polymerase inhibitors. The viral infection is selected from the group consisting of: hepatitis B, hepatitis C, human immunodeficiency virus, Polio, Coxsackie A and B, Rhino, Echo, small pox, Ebola, and West Nile virus. Thus, nucleoside II was **prepared** and is useful as antiviral and antitumor agent (no biol. data).

IT 5381-99-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)

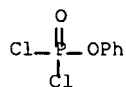


IT 770-12-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

RN 770-12-7 HCAPLUS

CN Phosphorodichloridic acid, phenyl ester (CA INDEX NAME)



CC 33-9 (Carbohydrates)

Section cross-reference(s): 1, 7, 28, 63

ST formulation prodrug human antitumor antiviral fuoropyrimidine
thienopyrimidine nucleoside **prepn**; fuoropyrimidine
thienopyrimidine nucleoside **prepn** antitumor antiviral
human prodrug cytotoxicity

IT Antitumor agents

Antiviral agents

Cytotoxicity

Human

Neoplasm

(**preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

IT Nucleosides, **preparation**

RL: PAC (Pharmacological activity); SPN (Synthetic preparation);
THU (Therapeutic use); BIOL (Biological study); PREP
(Preparation); USES (Uses)

(**preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

IT Drug delivery systems

(prodrugs; **preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

IT Infection

(viral; **preparation** of therapeutic fuoropyrimidine and
thienopyrimidine nucleosides as antitumor and antiviral agents)

IT Interferons
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (α ; **preparation** of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 9001-92-7, Protease 9012-90-2, DNA polymerase 9014-24-8, RNA
 polymerase 9026-28-2, Hepatitis C virus polymerase 9028-93-7,
 Inosine monophosphatedehydrogenase 36791-04-5, Ribavirin
 37259-58-8, Serine protease 69521-94-4, Thymosin α 1
 119567-79-2, Viramidine 206269-27-4, Levovirin
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (**preparation** of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 885593-31-7P
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic
 preparation); THU (Therapeutic use); BIOL (Biological study); PREP
 (Preparation); RACT (Reactant or reagent); USES (Uses)
 (**preparation** of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 86133-07-5P 133508-48-2P 872534-80-0P 885592-93-8P
 885592-94-9P 885592-95-0P 885592-96-1P 885592-97-2P
 885592-98-3P 885592-99-4P 885593-05-5P 885593-07-7P
 885593-09-9P 885593-12-4P 885593-14-6P 885593-21-5P
 885593-27-1P 885593-28-2P 885593-38-4P 885593-44-2P
 885593-49-7P 885593-53-3P 885593-56-6P 885593-58-8P
 885593-59-9P 885593-60-2P 885593-62-4P 885593-68-0P
 885593-69-1P 885593-70-4P 885593-72-6P 885593-75-9P
 885593-81-7P 885593-82-8P 885593-84-0P 885593-85-1P
 885593-86-2P 885593-87-3P 885593-88-4P
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation);
 THU (Therapeutic use); BIOL (Biological study); PREP
 (Preparation); USES (Uses)
 (**preparation** of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 50-69-1, D-Ribose 60-34-4 107-14-2, Chloracetonitrile
 108-95-2, Phenol, reactions 109-84-2 122-04-3 123-75-1,
 Pyrrolidine, reactions 503-29-7, Azetidine 628-22-8 685-87-0
 765-30-0, Cyclopropylamine 2491-20-5 2537-48-6 3473-63-0,
 Formamide acetate 5381-99-7 5587-68-8,
 4-Cyclopentene-1,3-dimethanol 5815-08-7 6306-52-1
 10025-87-3, Phosphoric trichloride 34840-23-8 50859-18-2,
 Tributylammonium pyrophosphate 59463-56-8 86204-14-0
 108549-23-1 168777-53-5 168777-55-7 188069-59-2
 443642-31-7 728022-71-7 885593-83-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**preparation** of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 770-12-7P 13039-63-9P 54623-25-5P 64363-77-5P
 80765-78-2P 80795-53-5P 261910-17-2P 582310-87-0P
 872201-70-2P 872201-71-3P 872201-72-4P 872201-73-5P
 872201-86-0P 885592-50-7P 885592-55-2P 885592-59-6P
 885592-61-0P 885592-63-2P 885592-66-5P 885592-67-6P
 885592-68-7P 885592-69-8P 885592-70-1P 885592-71-2P
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885593-46-4P 885593-47-5P 885593-48-6P 885593-50-0P
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 885593-78-2P 885593-79-3P 885593-80-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)

(preparation of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 56-37-1, Benzyltriethylammonium chloride 121-69-7,
 N,N-Dimethylaniline, reactions

RL: RGT (Reagent); RACT (Reactant or reagent)

(preparation of therapeutic fuoropyrimidine and
 thienopyrimidine nucleosides as antitumor and antiviral agents)

L91 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:1026983 HCAPLUS Full-text

DOCUMENT NUMBER: 147:143496

TITLE: Cyclic P(III)-phosphorylated derivatives of
 pamoic acid: Reaction of 4,4'-methylenebis(2-
 ethoxynaphtho[2,3-d]-1,3,2-dioxaphosphorin-4-
 one) with hexafluoroacetone

AUTHOR(S): Burnaeva, L. M.; Mironov, V. F.;
 Abdrakhmanova, L. M.; Ivkova, G. A.;
 Balandina, A. A.; Latypov, Sh. K.; Konovalova,
 I. V.; Pudovik, A. N.

CORPORATE SOURCE: Kazan State University, Kazan, Tatarstan,
 Russia

SOURCE: Russian Journal of General Chemistry (
 2006), 76(8), 1338-1339

CODEN: RJGCEK; ISSN: 1070-3632

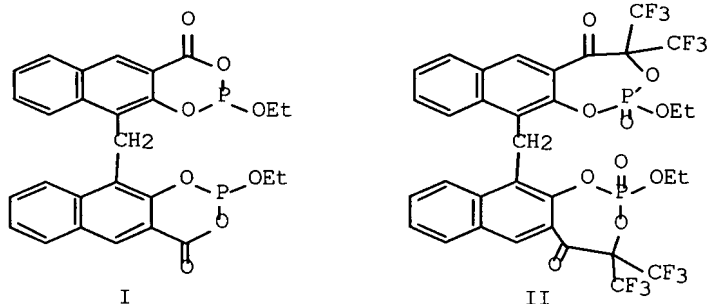
PUBLISHER: Pleiades Publishing, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 04 Oct 2006

GI



AB Insertion reaction of hexafluoroacetone into phosphorylated derivative of pamoic acid,
 e.g., methylenebis(ethoxynaphtho[2,3-d]-1,3,2- dioxaphosphorinone) I, in CCl₄/CH₂Cl₂ at
 -40° and then warmed to 20° to give 87% yield of a cyclic P(III)-phosphorylated
 derivative II. I was prepared from reacting excess EtOPCl₂ with pamoic acid
 trimethylsilyl derivative

IT 1498-42-6, Ethyl phosphorodichloridite

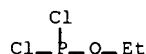
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of

pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos
pheapindione)

RN 1498-42-6 HCAPLUS

CN Phosphorodichloridous acid, ethyl ester (CA INDEX NAME)



IT 943432-74-4P

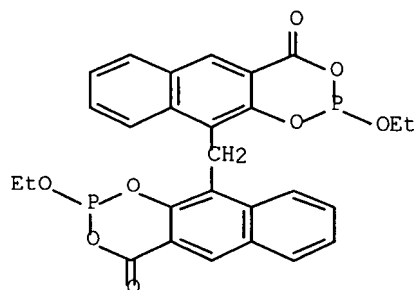
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of
pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos
pheapindione)

RN 943432-74-4 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



CC 29-7 (Organometallic and Organometalloidal Compounds)

ST pamoic acid phosphorylated **prepn** insertion ring
enlargement fluoroacetone; naphthodioxaphosphorinone
trifluoromethyl; methylenebisnaphthodioxaphosphorinone insertion
ring enlargement fluoroacetone

IT 684-16-2, Hexafluoroacetone 1498-42-6, Ethyl

phosphorodichloridite 202654-67-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of
pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos
pheapindione)

IT 943432-74-4P 943432-75-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of
pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos
pheapindione)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L91 ANSWER 7 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:450603 HCAPLUS Full-text

DOCUMENT NUMBER: 141:8868

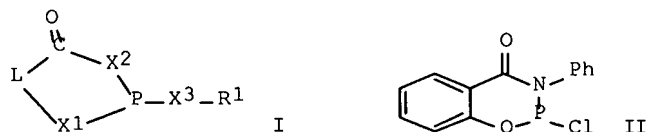
TITLE: Process for **manufacture** of nitrile
compounds from ethylenically unsaturated
compounds

INVENTOR(S): Galland, Jean Christophe; Didillon, Blaise;
Marion, Philippe; Bourgeois, Damien

PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.
 SOURCE: Fr. Demande, 24 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2847898	A1	20040604	FR 2002-15115	2002 1202
WO 2004060855	A1	20040722	WO 2003-FR3475	2003 1125
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003294074	A1	20040729	AU 2003-294074	2003 1125
EP 1567478	A1	20050831	EP 2003-789490	2003 1125
CN 1732148	A	20060208	CN 2003-80107525	2003 1125
JP 2006516543	T	20060706	JP 2004-564272	2003 1125
IN 2005CN01083	A	20070622	IN 2005-CN1083	2005 0601
US 2006142609	A1	20060629	US 2005-537260	2005 1014
PRIORITY APPLN. INFO.: FR 2002-15115 A WO 2003-FR3475 W				
OTHER SOURCE(S): CASREACT 141:8868; MARPAT 141:8868				

ED Entered STN: 04 Jun 2004
GI



AB Nitriles are **manufactured** by hydrocyanation of ethylenically unsatd. compds. in liquid media in the presence of transition metal compds. and ligands I [X1, X2 = O or NR2, R2 = H, alkyl, aryl, sulfonyl, cycloalkyl, or carbonyl, X3 = covalent bond, O, or NR2, R1 = (heteroatom-containing) C1-12 alkyl or aromatic or cycloaliph. radical optionally substituted and optionally containing heteroatoms and ≥ 1 condensed or noncondensed ring, L = (heteroatom-containing) divalent C1-12 alkyl or divalent aromatic or cycloaliph. radical optionally substituted and optionally containing heteroatoms or ≥ 1 condensed or noncondensed ring]. The process is particularly useful for the **synthesis** of adiponitrile starting from butadiene. A typical I was **manufactured** by dropwise adding THF containing. 600 mg o-tert-butylphenol and 0.85 mL NEt3 to a THF-PhMe solution containing 1.1 g phosphorochloridite II at -10° with stirring and stirring the resulting suspension 18 h at 25° . thus, adiponitrile was **prepared** in 74% yield from 3-pentenitrile via cyanation with acetone cyanohydrin in the presence of I [R1 = o-tolyl, L = 1,2-phenylene, X1 = X3 = O, X2 = NPh], bis(1,5-cyclooctadiene)nickel and ZnCl2.

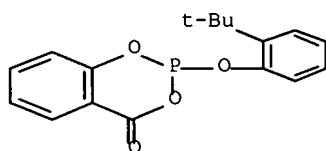
IT 696664-78-5

RL: CAT (Catalyst use); USES (Uses)

(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

RN 696664-78-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[2-(1,1-dimethylethyl)phenoxy]- (CA INDEX NAME)



IC ICM C07C255-04

ICS C07C253-10; C07F009-6584

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 23, 67

ST nitrile **manuf** unsatd compd hydrocyanation catalyst
transition metal; phosphorus cyclic compd carbonyl catalyst
hydrocyanation unsatd compd

IT Isomerization

Isomerization catalysts

(isomerization of pentenenitriles in **products** mixts.
from hydrocyanation of butadiene in presence of transition
metal compds. and cyclic phosphorus compds.)

- IT Hydrocyanation
Hydrocyanation catalysts
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT Lewis acids
Transition metal compounds
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT 696664-75-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(catalyst precursor; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 88-18-6, o-tert-Butylphenol 91-40-7, N-Phenylanthranilic acid
95-48-7, o-Cresol, reactions 108-39-4, m-Cresol, reactions 15494-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalyst precursor; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 7646-85-7, Zinc chloride, uses
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 7488-55-3, Stannous sulfate 7699-45-8, Zinc bromide 7772-99-8, Stannous chloride, uses 7773-01-5, Manganese chloride 7789-42-6, Cadmium bromide 10031-24-0, Stannous bromide 10108-64-2, Cadmium chloride 10139-47-6, Zinc iodide 13446-03-2, Manganese bromide 31186-57-9, Stannous tartarate 36554-90-2 128008-30-0
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT 75-86-5, Acetone cyanohydrin
RL: RGT (Reagent); RACT (Reactant or reagent)
(cyanating agent; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 696664-71-8P 696664-72-9P 696664-73-0P 696664-74-1P 696664-76-3P 696664-77-4P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 111-69-3P, Adiponitrile
RL: IMF (Industrial manufacture); PREP (Preparation)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic

- phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 4635-87-4, 3-Pentenitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
- IT 7439-88-5D, Iridium, compds. 7439-89-6D, Iron, compds.
 7439-97-6D, Mercury, compds. 7440-04-2D, Osmium, compds.
 7440-05-3, Palladium, uses 7440-06-4D, Platinum, compds.
 7440-16-6D, Rhodium, compds. 7440-18-8D, Ruthenium, compds.
 7440-22-4D, Silver, compds. 7440-43-9D, Cadmium, compds.
 7440-48-4D, Cobalt, compds. 7440-50-8D, Copper, compds.
 7440-57-5D, Gold, compds. 7440-66-6D, Zinc, compds.
 12266-58-9, Bis(acrylonitrile)nickel 14220-17-8, Potassium tetracyanonickelate 15133-82-1, Tetrakis(triphenylphosphine)nickel 696664-78-5
 RL: CAT (Catalyst use); USES (Uses)
 (manufacture of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT 4553-62-2P, 2-Methylglutaronitrile 17611-82-4P, 2-Ethylsuccinonitrile
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
- IT 78-79-5, Isoprene, reactions 100-42-5, Styrene, reactions 106-99-0, Butadiene, reactions 110-59-8, Valeronitrile 110-83-8, Cyclohexene, reactions 111-78-4, 1,5-Cyclooctadiene 592-42-7, 1,5-Hexadiene 592-51-8, 4-Pentenitrile 1335-86-0, Methylcyclohexene 4403-61-6, 2-Methyl-2-butenitrile 13284-42-9, 2-Pentenitrile 16529-56-9, 2-Methyl-3-butenitrile 25013-15-4, Methylstyrene 26588-32-9, Vinyl naphthalene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2003:757718 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:277002
 TITLE: **Preparation** of novel phosoxophite ligands and use thereof in carbonylation processes
 INVENTOR(S): Peng, Wei-Jun; Bryant, David Robert
 PATENT ASSIGNEE(S): Union Carbide Chemicals & Plastics Technology Corporation, USA
 SOURCE: PCT Int. Appl., 61 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2003078444	A2	20030925	WO 2003-US6456	2003 0304

WO 2003078444 A3 20031218 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW
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CN 1639177 A 20050713 CN 2003-805425 2003 0304
AT 320438 T 20060415 AT 2003-723671 2003 0304
US 2006100453 A1 20060511 US 2004-504247 2004 0810
US 7196230 B2 20070327 <--
PRIORITY APPLN. INFO.: US 2002-363725P P 2002 0311
WO 2003-US6456 W 2003 0304
OTHER SOURCE(S): CASREACT 139:277002; MARPAT 139:277002
ED Entered STN: 26 Sep 2003
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB A novel organophosphorus composition I and II (A, Z = H, halo, monovalent hydrocarbyl radicals, tri(hydrocarbyl)silyl radicals, etc.; B, Y = aryl, tertiary alkyl, tri(hydrocarbyl)silyl radicals, etc.; R1 = H, monovalent alkyl, aryl radicals; n = 0-2; X = (un)substituted alkyl and aryl diradicals) and **synthesis** thereof, the composition being characterized by one phosphite moiety, one phosoxophite moiety, and a plurality of sterically bulky substituents. The novel composition finds utility as a ligand in Group VIII transition metal phosoxophite complex catalysts and complex catalyst

precursors that are used in carbonylation processes, preferably, hydroformylation processes. Addnl., there is disclosed a novel method of **preparing** a phosphoromonochloridite composition that finds utility as a precursor to the novel phosoxophite composition. Thus, reaction of 3,3'-di-tert-butyl-5,5'-di-tert-pivaloyloxy-2,2'-biphenol with PCl_3 in $\text{Et}_2\text{O}/\text{THF}$ in the presence of N,N -dimethylaniline followed by sequential treatment with 3,3'-bis(trimethylsilyl)-5,5'-di-tert-butyl-2,2'-biphenol/ $\text{Et}_3\text{N}/\text{THF}$ and 3,5-dibromosalicylic acid/ $\text{Et}_3\text{N}/\text{THF}$ gave title phosoxophite which was used as ligand in $\text{Rh}(\text{CO})_2(\text{acac})$ catalyzed hydroformylation of 2-pentenol.

IT 604799-10-2P 604799-12-4P 604799-14-6P

604799-15-7P 604799-16-8P 604799-17-9P

604799-18-0P 604799-19-1P 604799-20-4P

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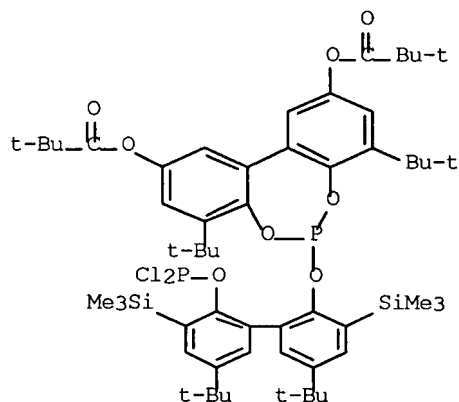
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

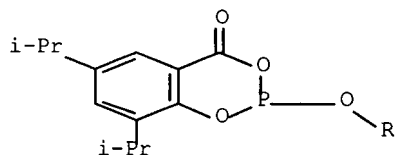
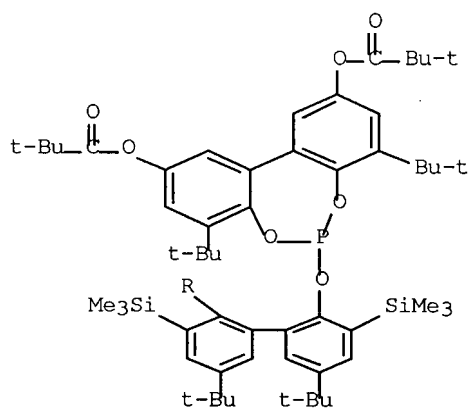
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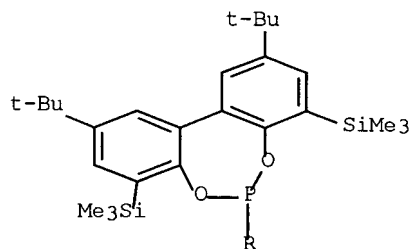


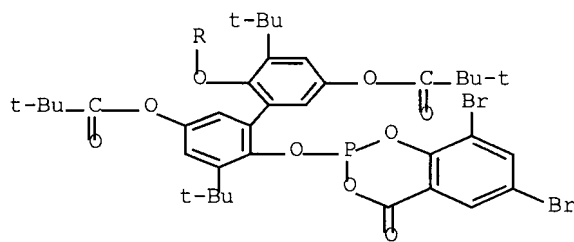
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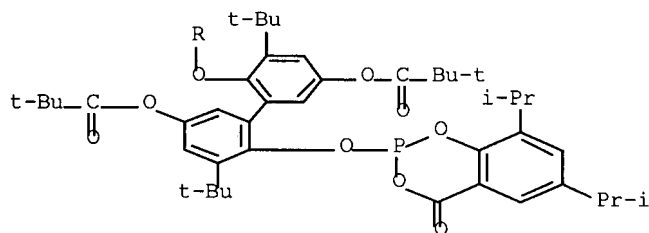
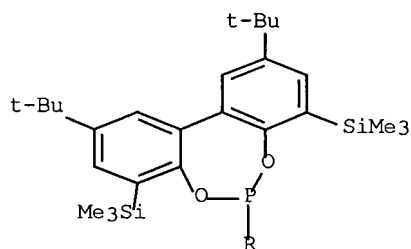
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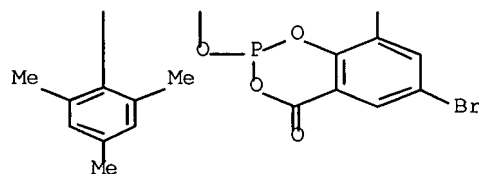
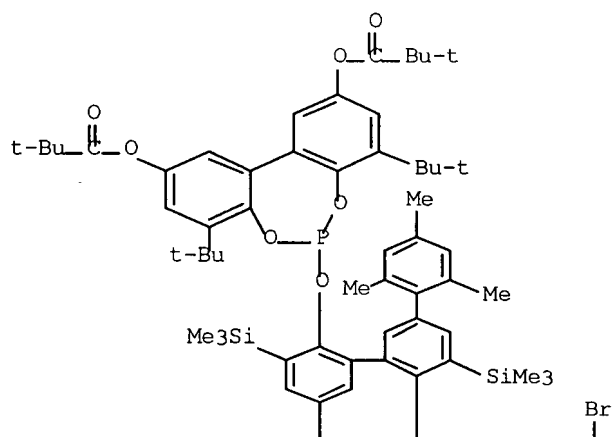
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CN Propanoic acid, 2,2-dimethyl-, 6-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-6'-[[6,8-bis(1-methylethyl)-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl]oxy]-5,5'-bis(1,1-dimethylethyl)[1,1'-biphenyl]-3,3'-diyl ester (9CI) (CA INDEX NAME)

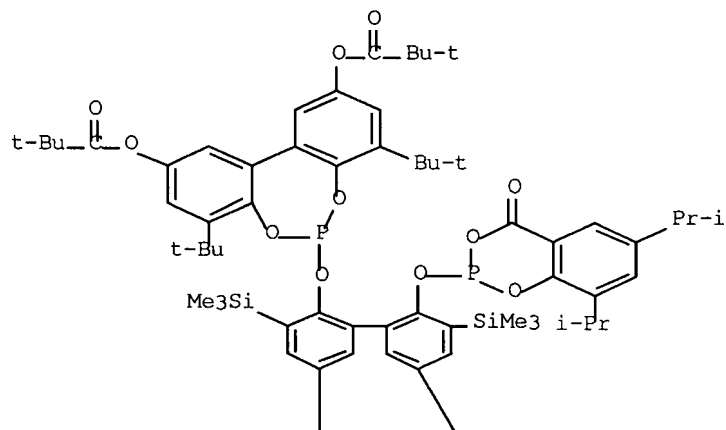


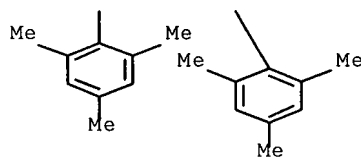
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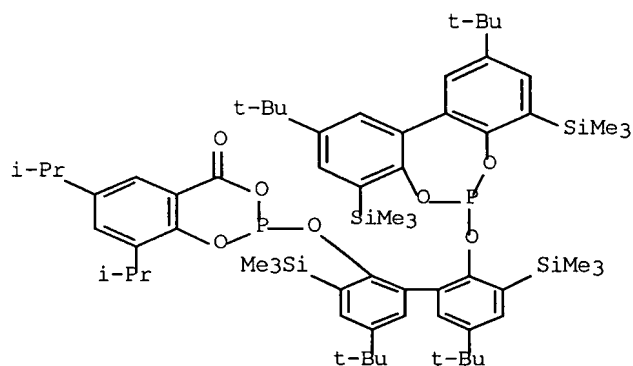
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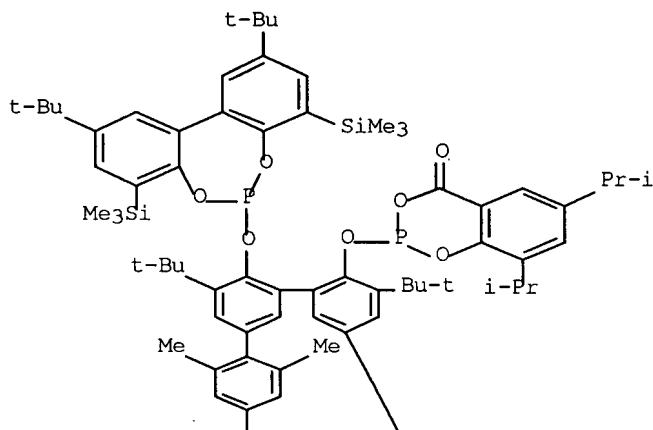
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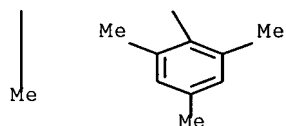


RN 604799-19-1 HCAPLUS

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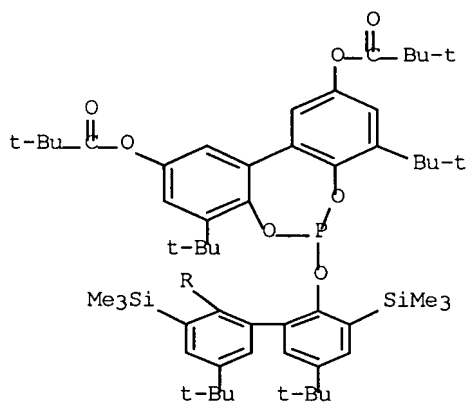


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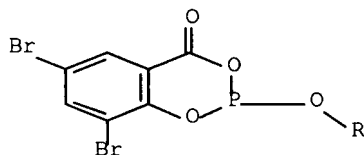


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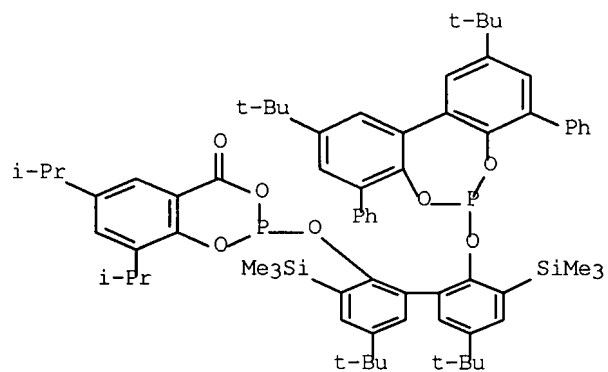
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PAGE 2-A

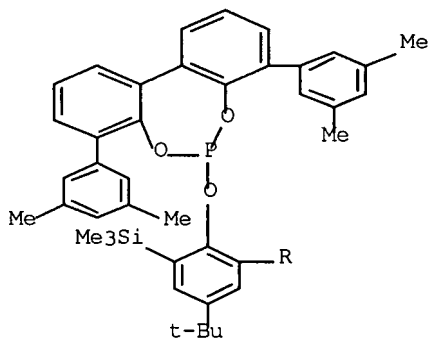


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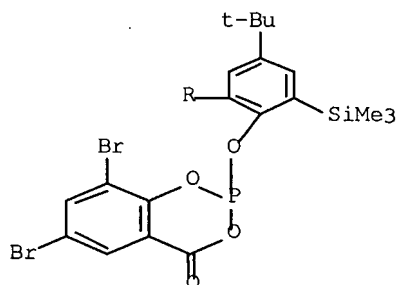


RN 604799-24-8 HCAPLUS
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PAGE 1-A



PAGE 2-A

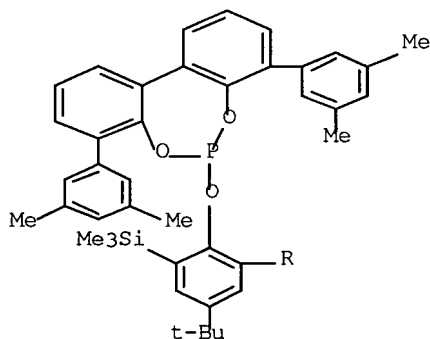


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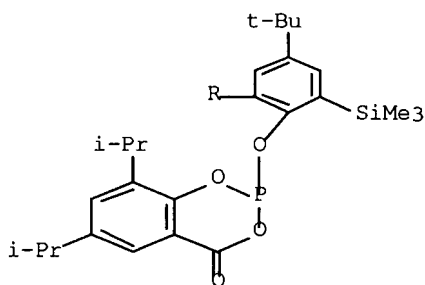
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dimethylphenyl)dibenzo[d,f][1,3,2]dioxaphosphin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-bis(1-methylethyl)- (CA INDEX NAME)

PAGE 1-A

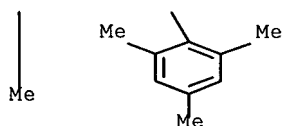
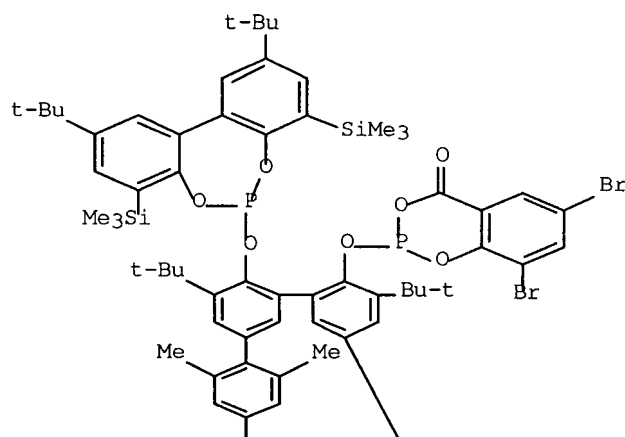


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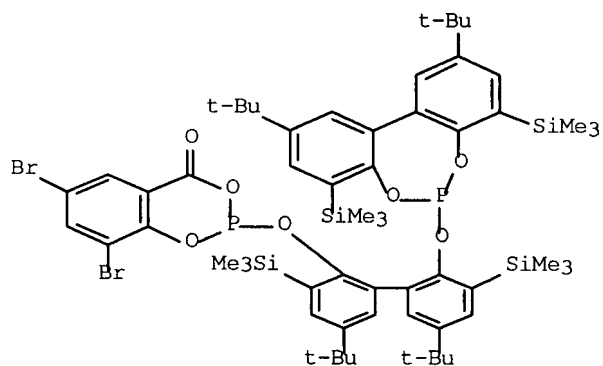


RN 604799-27-1 HCAPLUS

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IC ICM C07F009-6574
 ICS C07F015-00; C07C045-50
 CC 29-7 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 23
 ST phosoxophite ligand **prepn** transition metal catalyzed

- hydroformylation; carbonylation hydroacylation hydrocyanation
hydroamidation hydroesterification hydrocarboxylation catalyst
phosoxophite complex
- IT Acylation catalysts
Amidation catalysts
(hydro-; **preparation** of novel phosoxophite ligands and use
thereof in transition metal mediated catalytic processes)
- IT Alkoxy carbonylation catalysts
Carbonylation catalysts
Hydrocyanation catalysts
Hydroformylation catalysts
(**preparation** of novel phosoxophite ligands and use thereof
in transition metal mediated catalytic processes)
- IT Carboxylation catalysts
(reductive; **preparation** of novel phosoxophite ligands and
use thereof in transition metal mediated catalytic processes)
- IT 96-33-3, Methyl acrylate 100-42-5, Styrene, reactions
108-05-4, Vinyl acetate, reactions 39161-19-8, 3-Penten-1-ol
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroformylation; **preparation** of novel phosoxophite
ligands and use thereof in transition metal mediated catalytic
processes)
- IT 7439-88-5D, Iridium, complexes 7440-16-6D, Rhodium, complexes
7440-18-8D, Ruthenium, complexes 7440-48-4D, Cobalt, complexes
14874-82-9, (Acetylacetonato)dicarbonylrhodium
RL: CAT (Catalyst use); USES (Uses)
(**preparation** of novel phosoxophite ligands and use thereof
in transition metal mediated catalytic processes)
- IT 604799-10-2P 604799-12-4P 604799-13-5P
604799-14-6P 604799-15-7P 604799-16-8P
604799-17-9P 604799-18-0P 604799-19-1P
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604799-26-0P 604799-27-1P 604799-28-2P
604799-29-3P 604799-30-6P 604799-31-7P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
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in transition metal mediated catalytic processes)
- IT 111-66-0, 1-Octene 111-67-1, 2-Octene 2215-21-6,
3,5-Diisopropylsalicylic acid 3147-55-5 3639-21-2,
2-Ethyl-2-hydroxybutyric acid 17154-39-1 604799-08-8
604799-11-3, 3,3'-Di(trimethylsilyl)-5,5'-di(2,4,6-
trimethylphenyl)-2,2'-biphenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of novel phosoxophite ligands and use thereof
in transition metal mediated catalytic processes)
- IT 604799-09-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** of novel phosoxophite ligands and use thereof
in transition metal mediated catalytic processes)

L91 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:737766 HCAPLUS Full-text

DOCUMENT NUMBER: 139:246118

TITLE: Safer and simplified process for
production of bisphosphites containing
a dioxaphosphorinone moiety in three steps
from salicylic acid derivatives, phosphorus
trihalides, diols and halophosphites

INVENTOR(S): Borgmann, Cornelia

PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003076448	A1	20030918	WO 2002-EP13418	2002 1128
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10210918	A1	20031002	DE 2002-10210918	2002 0313
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DE 10210918	B4	20040603		
AU 2002358557	A1	20030922	AU 2002-358557	2002 1128
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EP 1483274	A1	20041208	EP 2002-792822	2002 1128
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CN 1622949	A	20050601	CN 2002-828528	2002 1128
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AT 297404	T	20050615	AT 2002-792822	2002 1128
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JP 2005527520	T	20050915	JP 2003-574664	2002 1128
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ES 2242895	T3	20051116	ES 2002-2792822	2002 1128
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IN 2004CN02000	A	20060224	IN 2004-CN2000	2004 0908
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			WO 2002-EP13418	W 2002 1128
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OTHER SOURCE(S): CASREACT 139:246118; MARPAT 139:246118

ED Entered STN: 19 Sep 2003

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*

AB The invention relates to a method for the **production** of bisphosphites, I (R1-R4 = H, C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon, F, Cl, Br, I, CF3, alkoxy, organosulfonyl, etc.; Q = C1-50 divalent aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aliphatic-aromatic, hydrocarbon, etc.; W, X = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon), which comprise dioxaphosphorinone components. The 3-step process entails (1) reaction of an (un)substituted salicylic acid derivative with PY3 (Y = Cl, Br, iodo) and base, preferably a tertiary amine, in an aprotic, nonpolar solvent, preferably C6H6, PhMe, PhEt or cyclohexane, to **form** halo-substituted benzodioxaphosphorinone intermediate III (same R1-R4, Y); (2) reaction of HO-Q-OH (same Q) with Z-P(OW)OX (same Q, W, X) in presence of a tertiary amine in a solvent as previously described to give intermediate HO-Q-O-P(OW)OX; (3) reaction of intermediate steps (1) and (2) to give bisphosphites I, useful industrially as antioxidants, as heat stabilizers for polymers such as PVC, and especially as ligands for transition-metal catalysis (no data). Base.HY or base.HZ byproducts are filtered off after at least one of these 3 steps. This process is advantageous compared to those described in prior art since no corrosive HCl gas is emitted, and the process is suitable for large-scale **production**. Thus, reaction of 3,3'-di-tert-butyl-2,2'-dihydroxy-5,5'-dimethoxybiphenyl with dioxaphosphaheterocycles **formed** from reaction of salicylic acid and 3,3'-di-tert-butyl-2,2'-dihydroxy-5,5'-dimethoxybiphenyl with PCl3 in presence of Et3N gave title compound II.

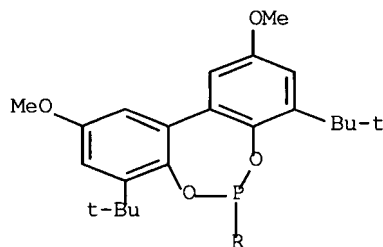
IT 352662-26-1P

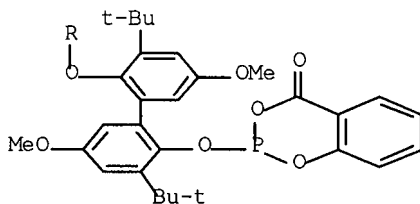
RL: SPN (Synthetic preparation); PREP (Preparation)
(improved **preparation** of bisphosphites containing
dioxaphosphorinone moiety from salicylic acid derivs., P
trihalides, diols and helophosphites)

RN 352662-26-1 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[4,8-bis(1,1-dimethylethyl)-2,10-dimethoxydibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-3,3'-bis(1,1-dimethylethyl)-5,5'-dimethoxy[1,1'-biphenyl]-2-yl]oxy]- (CA INDEX NAME)

PAGE 1-A





IC ICM C07F009-6574
 CC **29-7** (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): **45**
 ST bisphosphite dioxaphosphorinone **prepn** process;
 dioxaphospha heterocycle **prepn** reaction dihydroxy
 dimethoxybiphenyl
 IT Phosphites
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (bisphosphites; improved **preparation** of bisphosphites
 containing dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT Glycols, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT Heterocyclic compounds
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (phosphorus; improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT Amines, reactions
 RL: RGT (Reagent); RACT (Reactant or reagent)
 (tertiary; improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT 69-72-7, Salicylic acid, reactions 14078-41-2,
 3,3'-Di-tert-butyl-2,2'-dihydroxy-5,5'-dimethoxybiphenyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT **352662-26-1P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 IT 71-43-2, Benzene, uses 100-41-4, Ethylbenzene, uses 108-88-3,
 Toluene, uses 110-82-7, Cyclohexane, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; improved **preparation** of bisphosphites containing
 dioxaphosphorinone moiety from salicylic acid derivs., P
 trihalides, diols and helophosphites)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

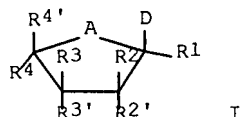
L91 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2003:697043 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:230954
 TITLE: **Preparation** of nucleotide mimics and
 their prodrugs as antiviral, antibacterial,
 and antitumor agents
 INVENTOR(S): Cook, Phillip Dan; Wang, Guangyi; Bruice,

Thomas W.; Boyle, Nicholas A.; Leeds, Janet
M.; Brooks, Jennifer L.; Prhavc, Marija;
Ariza, Maria Eugenia; Fagan, Patrick C.; Jin,
Yi; Rajwanshi, Vivek K.; Tucker, Kathleen D.
PATENT ASSIGNEE(S): Biota, Inc., USA
SOURCE: PCT Int. Appl., 184 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072757	A2	20030904	WO 2003-US6368	2003 0228
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WO 2003072757	A3	20040722		
WO 2003072757	A9	20041021		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2477741	A1	20030904	CA 2003-2477741	2003 0228
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EP 1485395	A2	20041215	EP 2003-713832	2003 0228
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IN 2004KN01257	A	20060505	IN 2004-KN1257	2004 0827
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 WO 2003-US6368 W 2003
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OTHER SOURCE(S): MARPAT 139:230954
 ED Entered STN: 05 Sep 2003
 GI



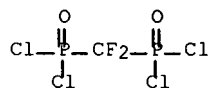
AB Nucleotide diphosphate mimics and nucleotide triphosphate mimics I, wherein A is O, S, NH, NR; R4' is LR5; L is O, S, NH, NR, CY2O, CY3S, CY2NH, CY2, CY2CY2, CY2OCY2, CY2SCY2, CY2NHCY2; Y is H, halogen, alkyl, alkenyl, alkynyl, R5 is substituted di- or triphosphate; R is alkyl, alkenyl, alkynyl, aryl, acyl, aralkyl; R1-R4 and R2'-R3' are independently H, halogen, OH, SH, NH2, NHOH, N3, NO2, CHO, CO2H, CN, CONH2, CO2R, R, OR, SR, SSR, NHR, NR2; D is nucleobase, which contain diphosphate or triphosphate moiety mimics and optionally sugar-modifications and/or base-modifications were **prepared** as antiviral, antibacterial, and antitumor agents. The present invention provides a method for the treatment of viral infections, microbial infections, and proliferative disorders. The present invention also relates to pharmaceutical compns. comprising the compds. of the present invention optionally in combination with other pharmaceutically active agents. Thus, 3'-azido-3'-deoxythymidine 5'- α -P-borano- β , γ -(difluoromethylene)triphosphate was **prepared** and tested in vitro as antiviral, antibacterial, and antitumor agent and HIV reverse transcriptase inhibitor ($K_i = 0.008-0.061 \mu M$).

IT 591220-76-7P

RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)

RN 591220-76-7 HCAPLUS

CN Phosphonic dichloride, (difluoromethylene)bis- (9CI) (CA INDEX NAME)

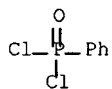


IT 824-72-6 1499-29-2 5381-99-7

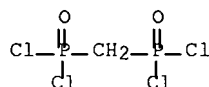
RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)

RN 824-72-6 HCAPLUS

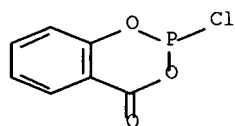
CN Phosphonic dichloride, P-phenyl- (CA INDEX NAME)



RN 1499-29-2 HCAPLUS
 CN Phosphonic dichloride, P,P'-methylenebis- (CA INDEX NAME)



RN 5381-99-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



IC ICM C12N
 CC 33-9 (Carbohydrates)
 Section cross-reference(s): 1, 7, 63
 ST nucleotide **prepn** prodrug antiviral antibacterial
 antitumor human
 IT Infection
 (bacterial; **preparation** of nucleotide mimics and their
 prodrugs as antiviral antibacterial and antitumor agents)
 IT Antibacterial agents
 Antitumor agents
 Antiviral agents
 Human
 Neoplasm
 (**preparation** of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)
 IT Nucleotides, **preparation**
 RL: IMF (Industrial manufacture); PAC (Pharmacological activity);
 SPN (Synthetic preparation); THU (Therapeutic use); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (**preparation** of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)
 IT Drug delivery systems
 (prodrugs; **preparation** of nucleotide mimics and their
 prodrugs as antiviral antibacterial and antitumor agents)
 IT Infection
 (viral; **preparation** of nucleotide mimics and their
 prodrugs as antiviral antibacterial and antitumor agents)
 IT 9068-38-6, Reverse transcriptase
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (HIV; **preparation** of nucleotide mimics and their prodrugs
 as antiviral antibacterial and antitumor agents)
 IT 9040-57-7, Ribonucleotide reductase
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (**preparation** of nucleotide mimics and their prodrugs as

antiviral antibacterial and antitumor agents)

IT 138273-01-5P 141171-21-3P 591220-71-2P 591220-72-3P
 591220-73-4P 591220-74-5P 591220-75-6P 591220-77-8P
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 591221-02-2P 591221-04-4P 591221-05-5P 591221-07-7P
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 RL: IMF (Industrial manufacture); PAC (Pharmacological activity);
 SPN (Synthetic preparation); THU (Therapeutic use); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (preparation of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)

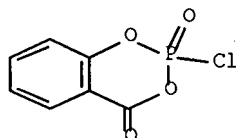
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 591753-91-2P
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic
 preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)

IT **824-72-6** 993-13-5, Methylphosphonic acid
1499-29-2 1660-95-3 1984-15-2 3416-05-5
5381-99-7 6145-31-9 7288-28-0 13966-08-0
 18997-19-8 22560-50-5 30516-87-1, AZT 36653-82-4,
 1-Hexadecanol 40290-32-2 56183-63-2 64638-13-7 74257-00-4
 94892-66-7 95058-81-4 101249-81-4 104714-96-7 130306-02-4
 133745-75-2, N-Fluorobenzenesulfonimide 163706-61-4
 183584-85-2 443642-29-3 591220-97-2 591753-75-2
 591753-77-4 591753-85-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)

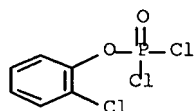
IT 88996-23-0
 RL: RGT (Reagent); RACT (Reactant or reagent)
 (preparation of nucleotide mimics and their prodrugs as
 antiviral antibacterial and antitumor agents)

L91 ANSWER 11 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1999:625303 HCAPLUS Full-text
 DOCUMENT NUMBER: 132:23164
 TITLE: **Synthesis** of 3'-Sugar- and
 Base-Modified Nucleotides and Their
 Application as Potent Chain Terminators in DNA
 Sequencing
 AUTHOR(S): Stolze, Karen; Koert, Ulrich; Klingel, Sven;
 Sagner, Gregor; Wartbichler, Regina; Engels,
 Joachim W.
 CORPORATE SOURCE: Institut fur Organische und Bioorganische
 Chemie, Humboldt-Universitat zu Berlin,
 Berlin, D-10115, Germany
 SOURCE: Helvetica Chimica Acta (1999),
 82(9), 1311-1323
 CODEN: HCACAV; ISSN: 0018-019X
 PUBLISHER: Verlag Helvetica Chimica Acta
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 01 Oct 1999

- AB Two 3'-modified and three base-modified ddNTPs were **synthesized** and tested with several DNA polymerases for incorporation activity. Starting from 3'-azido-3'-deoxythymidine (AZT), we were able to **produce** 3'-deoxy-3'-isocyanato- thymidine and 3'-deoxy-3'-isothiocyanatothymidine in a rapid **synthesis** based on the solid-support approach. These 3'-functionalities could be used to attach a spacer mol. via urea and thiourea groups, resp. Since the thus-obtained tethered nucleotides can be used to label with fluorescent dyes , they are convenient building blocks for practical applications in DNA sequencing. Furthermore, we **synthesized** the N4-modified dideoxycytidine 5'-triphosphate dye derivs. with different lengths of linkers between the base residue and the dye. Base-specific nucleosides were well accepted by the DNA-polymerases and showed perfect termination quality.
- IT **5381-98-6 15074-54-1, 2-**
Chlorophenylphosphorodichloridate
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
- RN 5381-98-6 HCAPLUS
- CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



- RN 15074-54-1 HCAPLUS
- CN Phosphorodichloridic acid, 2-chlorophenyl ester (CA INDEX NAME)



- CC 33-10 (Carbohydrates)
Section cross-reference(s): 3, 6, 7
- ST deoxyribonucleotide chain terminator DNA sequencing polymerase
prepn; azidodeoxythymidine DNA sequencing fluorescent dye
labeled linker **prepn**; deoxycytidine phosphate dye
labeled substrate enzyme **prepn**
- IT DNA sequence analysis
Fluorescent dyes
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
- IT Enzymes, uses
RL: CAT (Catalyst use); USES (Uses)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
- IT Deoxyribonucleotides
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT DNA
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
 (single-stranded; **preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT Genetic element
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
 (terminator; **preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT 251932-46-4P
 RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
 (**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT 9012-90-2, ThermoSequenase 9027-67-2, Terminal deoxynucleotidyl transferase
 RL: CAT (Catalyst use); USES (Uses)
 (**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

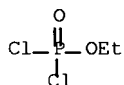
IT 383-63-1 603-35-0D, Triphenylphosphine, polymer-bound
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15074-54-1, 2-Chlorophenylphosphorodichloridate
 30516-87-1 65915-94-8 216965-96-7 252045-37-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT 5983-09-5P 56934-05-5P 130945-07-2P 188438-79-1P
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 251557-25-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

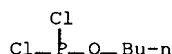
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 12 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1999:462283 HCAPLUS Full-text
 DOCUMENT NUMBER: 131:162533
 TITLE: Total reorganization energy and its components in processes of one-electron oxidation of phosphorus compounds in acetonitrile
 AUTHOR(S): Yanilkin, V. V.; Zverev, V. V.
 CORPORATE SOURCE: A. E. Arbuzov Institute of Organic and Physical Chemistry, Kazan' Scientific Center of the Russian Academy of Sciences, Kazan', 420088, Russia
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1999), 48(4), 677-685
 CODEN: RCBUEY; ISSN: 1066-5285
 PUBLISHER: Consultants Bureau
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 29 Jul 1999

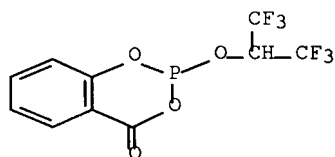
- AB The ionization processes of phosphorus(III) and (IV) compds. oxidized in the potential range of 1.8-4.0 V vs. Ag/0.01 M AgNO₃ in MeCN were studied by chronovoltammetry on a Pt ultramicroelectrode in acetonitrile and by photoelectron spectroscopy in the gas phase. A relationship between the half-wave potential (E_{1/2}) and vertical ionization potential (IP_v) $E_{1/2} = 0.89IP_v - 6.27$ is fulfilled in a wide potential range from -0.37 to 3.98 V. The total reorganization energy of the system (1.45-2.50 V) and the energy of reorganization of the solvate shell (0.9-1.9 eV) were estimated
- IT **1498-51-7 10496-13-6 157071-81-3**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (total reorganization energy and its components in processes of one-electron oxidation of phosphorus compds. in acetonitrile)
- RN 1498-51-7 HCAPLUS
- CN Phosphorodichloridic acid, ethyl ester (CA INDEX NAME)



- RN 10496-13-6 HCAPLUS
- CN Phosphorodichloridous acid, butyl ester (8CI, 9CI) (CA INDEX NAME)

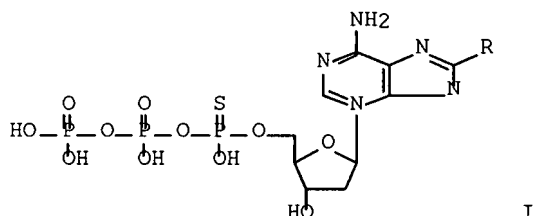


- RN 157071-81-3 HCAPLUS
- CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[2,2,2-trifluoro-1-(trifluoromethyl)ethoxy]- (9CI) (CA INDEX NAME)



- CC 72-2 (Electrochemistry)
 Section cross-reference(s): 65
- IT 60-29-7, Diethyl ether, reactions 67-56-1, Methanol, reactions 67-64-1, 2-Propanone, reactions 78-40-0 102-85-2, Tributoxyphosphine 121-45-9, Trimethoxyphosphine 126-73-8, Phosphoric acid tributyl ester, reactions 370-69-4 512-56-1 554-70-1, Triethylphosphine 603-35-0, Triphenylphosphine, reactions 765-40-2 791-28-6 797-70-6 822-39-9 829-85-6, Diphenylphosphine 868-85-9 998-40-3 **1498-51-7** 1641-40-3 2241-68-1 2729-11-5 3402-24-2 **10496-13-6** 14394-26-4 20570-25-6 36198-87-5 65611-17-8 66470-81-3 75956-77-3 104728-29-2 106054-01-7 141968-97-0 **157071-81-3**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (total reorganization energy and its components in processes of one-electron oxidation of phosphorus compds. in acetonitrile)
- REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE

L91 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1994:107598 HCAPLUS Full-text
 DOCUMENT NUMBER: 120:107598
 TITLE: **Synthesis** of 8-bromo- and
 8-azido-2'-deoxyadenosine-5'-O-(1-
 thiotriphosphate)
 AUTHOR(S): Ettner, Norbert; Haak, Ute; Niederweis,
 Michael; Hillen, Wolfgang
 CORPORATE SOURCE: Inst. Mikrobiol. Biochem., Friedrich-Alexander
 Univ. Erlangen-Nuernberg, Erlangen, 8520,
 Germany
 SOURCE: Nucleosides & Nucleotides (1993),
 12(7), 757-71
 CODEN: NUNUD5; ISSN: 0732-8311
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 05 Mar 1994
 GI



AB Treatment of 3'-O-methoxyacetylated 8-bromo-2'-deoxyadenosine with a two fold excess of salicyl phosphorochloridite and subsequent reaction with bis(tri-n-butylammonium) pyrophosphate and oxidation with sulfur followed by removal of the protecting group gives predominantly 8-chromo-2'-deoxyadenosine 5'-O-(1-thiotriphosphate) (I; R = Br) and minor amts. of the corresponding brominated monothiophosphate. Alternatively, the photoreactive dATP analog 8-azido-2'-deoxyadenosine-5'-O-(1-thiotriphosphate) (I; R = N₃) (II) is obtained by phosphorylation of unprotected 8-azido-2'-deoxyadenosine with a 1.8 molar equivalent excess of thiophosphoryl chloride and bis(tri-n-butylammonium) pyrophosphate. A protection of the nucleobase 6-amino group is not required. The photoaffinity labeling reagent II was characterized by 31P-NMR and ion-spray mass spectroscopy and its photolysis upon long wavelength UV irradiation was studied. Both α-thio derivs. of 2'-deoxyadenosine triphosphates can be incorporated into plasmid DNA by T7 DNA polymerase. Thus, they can be used for interference studies of protein binding and for crosslinking with amino acids in protein-nucleic acid-complexes.

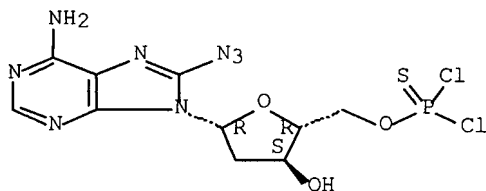
IT 152388-53-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (intermediate in **preparation** of 8-azidodeoxyadenosine
 thiotriphosphate)

RN 152388-53-9 HCAPLUS

CN Adenosine, 8-azido-2'-deoxy-, 5'-phosphorodichloridothioate (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.

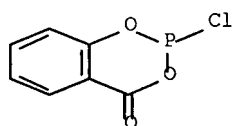


IT 5381-99-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromodeoxyadenosine
thiotriphosphate)

RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



CC 33-9 (Carbohydrates)

Section cross-reference(s): 3, 34

ST azidodeoxyadenosine thiotriphosphate **prepn** incorporation
plasmid DNA; nucleotide thiotriphosphate **prepn**
incorporation plasmid DNA; polymerase incorporation plasmid DNA
azidodeoxyadenosine thiotriphosphate

IT 131265-35-5P 152388-53-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in **preparation** of 8-azidodeoxyadenosine
thiotriphosphate)

IT 17331-22-5P 152388-55-1P 152388-56-2P 152388-57-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in **preparation** of 8-bromodeoxyadenosine
thiotriphosphate)

IT 9012-90-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and incorporation of nucleotide
thiotriphosphate into plasmid DNA by)

IT 152388-54-0P 152388-58-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and incorporation of, into plasmid DNA by T7
DNA polymerase)

IT 152388-52-8P 152956-11-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

IT 3982-91-0, Phosphorothioic trichloride

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-azidodeoxyadenosine
thiotriphosphate)

IT 958-09-8, 2'-Deoxyadenosine

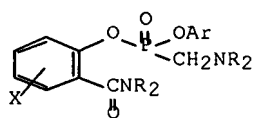
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromo- and
8-azidodeoxyadenosine thiotriphosphate)

IT 5381-99-7 19500-95-9

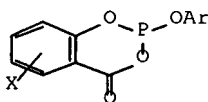
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromodeoxyadenosine
thiotriphosphate)

L91 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1990:441020 HCAPLUS Full-text
 DOCUMENT NUMBER: 113:41020
 TITLE: Method for the **preparation** of
 carbamoylphenyl(aminomethyl)phosphates
 INVENTOR(S): Bliznyuk, N. K.; Chvertkina, L. V.; Madzhara,
 G. A.; Kvasha, N. A.; Smirnova, S. B.;
 Chvertkin, B. Ya.
 PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of
 Phytopathology, USSR
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret. 1990,
 (10), 106.
 CODEN: URXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Russian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1549957	A1	19900315	SU 1988-4429690	1988 0524
			<--	
PRIORITY APPLN. INFO.:			SU 1988-4429690	1988 0524
			<--	
ED Entered STN: 03 Aug 1990				
GI				



I



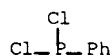
II

AB The title compds. [I; R = alkyl; R2N = piperidino, morpholino; X = H, alkyl, halo; Ar = (un)substituted Ph] were **prepared** by reaction of substituted methylenediamines with salicylic acid-phosphite addition **products** II in refluxing PhH. II were **prepared** by refluxing (substituted) salicylic acids with aryldichlorophosphites in PhH containing pyridine catalyst.

IT **644-97-3D**, Dichlorophenylphosphine, derivs.
 RL: **RCT (Reactant)**; RACT (Reactant or reagent)
 (cyclocondensation of, with salicylic acid derivs.)

RN **644-97-3** HCAPLUS

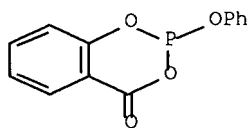
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



IT **2077-04-5DP**, derivs.
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (**preparation** and ring-opening aminomethylation of)

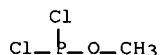
RN **2077-04-5** HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-phenoxy- (8CI, 9CI) (CA INDEX NAME)



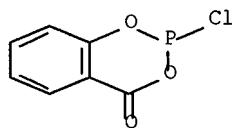
IC ICM C07F009-40
 CC 29-7 (Organometallic and Organometalloidal Compounds)
 IT **644-97-3D**, Dichlorophenylphosphine, derivs.
 RL: **RCT (Reactant)**; RACT (Reactant or reagent)
 (cyclocondensation of, with salicylic acid derivs.)
 IT **2077-04-5DP**, derivs.
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and ring-opening aminomethylation of)
 IT 128147-08-ODP, derivs.
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of)

L91 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1989:39289 HCAPLUS Full-text
 DOCUMENT NUMBER: 110:39289
 TITLE: **Synthesis** of oligonucleotide
 derivatives bearing amino and sulfhydryl
 groups on a polymer support. Introduction of
 spin, fluorescent and other labels
 AUTHOR(S): Bashuk, O. S.; Zarytova, V. F.; Levina, A. S.
 CORPORATE SOURCE: Novosib. Inst. Bioorg. Chem., Novosibirsk,
 USSR
 SOURCE: Bioorganicheskaya Khimiya (1988),
 14(5), 606-14
 CODEN: BIKHD7; ISSN: 0132-3423
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 ED Entered STN: 04 Feb 1989
 AB Reactions of mono- and dialkyl phosphites (H-phosphonates) were used to introduce amino
 and mercapto groups into oligonucleotides, which were **synthesized** by the solid-phase
 amidophosphite method. The oligonucleotide H phosphonates were obtained by
 phosphorylation with PCl₃, salicyl chlorophosphite, or MeOPCl₃. Residues of N-(2-
 hydroxyethyl)phenazinium and fluorescein were added to amino groups of the obtained
 derivs.; a spin-labeled derivative was obtained from the 5'-thiophosphate of
 decathymidylate.
 IT **3279-26-3**, Methyl dichloro phosphite
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with nucleotides)
 RN 3279-26-3 HCAPLUS
 CN Phosphorodichloridous acid, methyl ester (8CI, 9CI) (CA INDEX
 NAME)



IT **5381-99-7**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with oligonucleotides)

RN 5381-99-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



CC 33-9 (Carbohydrates)
 IT Nucleotides, polymers
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (oligo-, **preparation** of amino- and thiophosphate-containing,
 spin and fluorescent labeling of)
 IT 118215-26-2DP, polymer-bound and protected
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** and amidation by ethylenediamine)
 IT 118215-27-3DP, polymer-bound and protected
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and aminolysis of)
 IT 118229-95-1DP, polymer-bound and protected
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** and elimination of trifluoroacetyl group
 from)
 IT 118215-17-1P 118215-18-2P 118215-19-3DP, polymer-bound and
 protected
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and oxidation of)
 IT 54503-70-7P 71425-51-9P 118215-16-0DP, polymer-bound and
 protected
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction with
 (hydroxyethyl)trifluoroacetamide)
 IT 118215-28-4DP, polymer-bound and protected
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and sulfuration of)
 IT 66191-12-6P 88770-29-0DP, polymer-bound 118215-20-6P
 118215-21-7P 118215-22-8DP, polymer-bound 118215-24-0P
 118215-25-1P 118215-29-5DP, polymer-bound and protected
 118215-30-8P 118215-31-9P 118229-96-2P 118229-97-3P
 118229-98-4P 118229-99-5P 118230-00-5P 118230-01-6P
 118230-02-7P 118250-33-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of)
 IT 3279-26-3, Methyl dichloro phosphite
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with nucleotides)
 IT 5381-99-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with oligonucleotides)

L91 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1988:182222 HCAPLUS Full-text
 DOCUMENT NUMBER: 108:182222
 TITLE: Synergistic plant growth regulator
 compositions containing malonic acid
 derivatives
 INVENTOR(S): See, Raymond Michael; Fritz, Charles David;

10/584,492

PATENT ASSIGNEE(S): Manning, David Treadway; Wheeler, Thomas Neil;
 SOURCE: Cooke, Anson Richard
 Rhone-Poulenc Nederlands B. V., Neth.
 PCT Int. Appl., 234 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 8705781	A2	19871008	WO 1987-US648	1987 0330
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WO 8705781	A3	19871203		
W: AU, BR, DK, FI, HU, JP, KR, MW, NO, SD, SU				
RW: AT, BE, CH, DE, FR, GB, IT, NL, SE				
US 5123951	A	19920623	US 1987-17150	1987 0304
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AU 8772371	A	19871020	AU 1987-72371	1987 0330
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AU 614488	B2	19910905		
JP 63503064	T	19881110	JP 1987-502284	1987 0330
			<--	
JP 2749578	B2	19980513		
HU 46519	A2	19881128	HU 1987-2058	1987 0330
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AT 78976	T	19920815	AT 1987-902947	1987 0330
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FI 90189	C	19940110		
PRIORITY APPLN. INFO.:			US 1986-846392	A 1986 0331

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 WO 1987-US648 A 1987
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ED Entered STN: 28 May 1988

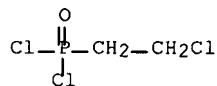
AB The title composition comprises an ethylene response- or an ethylene-type response-inducing agent and the malonic acid derivative R1Y1C(:Y5)CY3Y4C(:Y6)Y2R2 [R1, R2 = H, (un)substituted carbocyclyl, aryl or heterocyclyl, XR3, P(:Y7)(Y8R4)(Y9R5), Y10P(:Y7)(Y8R4)(Y9R5), C(Y8R4)(Y9R5), etc.; Y1, Y2 = (un)substituted heteroatom; Y3, R4 = H, (un)substituted heteroatom, substituted C, etc.; Y3Y4 = O, S, N2, etc.; Y3CY4 = ring system; Y5, Y6 = O, S; X = single or double bond, (un)substituted heteroatom, substituted C, etc.; R3 = (un)substituted carbocyclyl, aryl or heterocyclyl, substituted C or heteroatom, (un)substituted chain, etc.; Y7, Y10 = O, S; Y8, Y9 = O, S, amino, covalent single bond; R4, R5 = H, (un)substituted alkyl, alkenyl, alkynyl, Ph, etc.]. 4-Fluoroaniline was reacted with Et malonyl chloride in Et3N-containing THF, to give Et 3-[(4-fluorophenyl)amino]-3-oxopropanoate. A mixture of ethephon and Et 1-(2-methyl-4-bromophenyl)aminocarbonylcyclopropanecarboxyl ate (0.25 lb/acre each) caused 80% defoliation of snap bean, whereas the components by themselves were inactive.

IT 690-12-0 88169-35-1

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
 (plant growth regulator, synergistic)

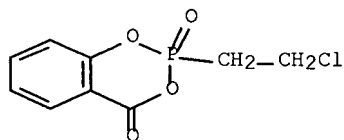
RN 690-12-0 HCAPLUS

CN Phosphonic dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 88169-35-1 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(2-chloroethyl)-, 2-oxide
 (9CI) (CA INDEX NAME)



IC ICM A01N057-24

ICS A01N057-22; A01N057-20; A01N057-08; A01N057-06; A01N057-04;
 A01N053-00; A01N041-04; A01N037-30; C07C103-36; C07C103-38

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 25

IT 690-12-0 999-82-6 5853-72-5 7582-45-8 16672-87-0

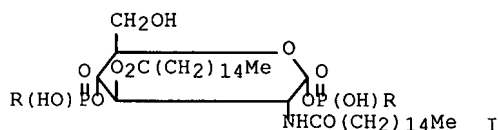
17378-30-2 23459-82-7 25431-72-5 25431-74-7 26271-37-4

27366-98-9 27366-99-0 53986-90-6 88169-33-9 88169-34-0
88169-35-1 88169-36-2 88169-37-3 88169-38-4
 88169-39-5 114110-71-3 114110-73-5 114110-74-6 114110-75-7
 114110-76-8 114110-77-9 114110-78-0 114110-79-1
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 114111-08-9 114111-09-0 114111-10-3 114111-12-5
 114170-69-3 114233-40-8 114233-41-9 114233-42-0
 114233-43-1 114233-44-2 114233-45-3 114233-46-4
 RL: AGR (Agricultural use); BAC (Biological activity or effector,
 except adverse); BSU (Biological study, unclassified); BIOL
 (Biological study); USES (Uses)
 (plant growth regulator, synergistic)
 IT 113137-31-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and chlorination of)
 IT 113137-42-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and desilylation of)
 IT 40924-27-4P, Diethyl methoxymalonate 56752-44-4P 106352-21-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and hydrolysis of)
 IT 113137-43-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction of, with Et chloroformate)
 IT 3697-67-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction of, with Me dichloroaniline)
 IT 87545-71-9P 113137-14-7P 113137-25-0P 113137-32-9P
 113137-33-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction of, with aniline derivs.)
 IT 114233-39-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction of, with bromomethylaniline)
 IT 4270-39-7P 6315-45-3P 10390-08-6P 15270-54-9P 15386-78-4P
 15386-79-5P 15386-82-0P 15386-86-4P 15386-89-7P
 15960-82-4P 17722-30-4P 53341-66-5P 58271-36-6P
 60453-83-0P 62033-65-2P 72324-44-8P 72324-45-9P
 73877-03-9P 79195-36-1P 79612-79-6P 82607-62-3P
 82607-64-5P 90475-72-2P 91494-75-6P 104330-51-0P
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 113117-17-2P 113117-18-3P 113117-19-4P 113117-20-7P
 113117-21-8P 113117-22-9P 113117-23-0P 113117-24-1P
 113117-25-2P 113117-26-3P 113117-27-4P 113117-28-5P
 113117-29-6P 113117-30-9P 113117-31-0P 113117-32-1P
 113117-33-2P 113117-34-3P 113117-35-4P 113117-36-5P
 113117-37-6P 113117-38-7P 113117-39-8P 113117-40-1P
 113117-41-2P 113117-42-3P 113117-43-4P 113117-44-5P
 113117-45-6P 113117-46-7P 113117-47-8P 113117-48-9P
 113117-49-0P 113117-50-3P 113117-51-4P 113117-52-5P
 113117-53-6P 113117-54-7P 113117-55-8P 113117-57-0P
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113117-71-8P	113117-72-9P	113117-73-0P	113117-74-1P
113117-75-2P	113117-76-3P	113117-77-4P	113117-78-5P
113117-79-6P	113117-80-9P	113117-81-0P	113117-82-1P
113117-83-2P	113117-84-3P	113117-85-4P	113117-86-5P
113136-66-6P	113136-67-7P	113136-73-5P	113136-74-6P
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113136-91-7P	113136-92-8P	113136-93-9P	113136-94-0P
113136-95-1P	113136-96-2P	113136-99-5P	113137-00-1P
113137-01-2P	113137-02-3P	113137-03-4P	113137-04-5P
113137-05-6P	113137-06-7P	113137-07-8P	113137-08-9P
113137-09-0P	113137-10-3P	113137-11-4P	113137-26-1P
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113137-37-4P	113137-38-5P	113137-39-6P	113137-40-9P
113164-84-4P	114111-00-1P	114233-29-3P	114233-30-6P
114233-31-7P	114233-32-8P	114233-33-9P	114233-34-0P
114233-35-1P	114233-36-2P	114233-37-3P	114233-38-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of, as component in plant growth regulator
compns.)

L91 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:529534 HCAPLUS Full-text
DOCUMENT NUMBER: 109:129534
TITLE: **Synthesis** of diphosphorylated and
diphosphonylated two Lipid A monosaccharide
analogues via phosphite intermediates
AUTHOR(S): Westerduin, P.; Veeneman, G. H.; Van Boom, J.
H.
CORPORATE SOURCE: Gorlaeus Lab., Leiden Univ., Leiden, 2300 RA,
Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas (
1987), 106(12), 601-6
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 109:129534
ED Entered STN: 14 Oct 1988
GI



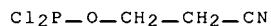
AB The **synthesis** of 2 Lipid A monosaccharide analogs, 3-O-palmitoyl-2-deoxy-2-palmitamido- α -D-glucopyranose 1,4-diphosphate (I; R = OH) and the resp. 1,4-bis(1H-phosphonate) (I; R = H) is described. The introduction of the phosphate functions was achieved via phosphatidylation of the anomeric and nonanomeric OH groups with the monofunctional phosphitylating reagents benzyl 2-cyanoethyl N,N-diethylphosphoramidite and salicyl phosphochloridite. Oxidation of the intermediate phosphite triester and subsequent removal of all the protective groups afforded the target mols. I.

IT 76101-30-9

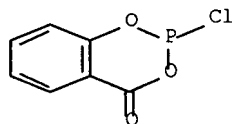
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxypropionitrile)

RN 76101-30-9 HCAPLUS

CN Phosphorodichloridous acid, 2-cyanoethyl ester (6CI, 9CI) (CA
INDEX NAME)



IT **5381-99-7**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with palmitoyldeoxypalmitidoglucofuranose)
 RN 5381-99-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



CC 33-7 (Carbohydrates)
 ST lipid A monosaccharide analog **prepn**;
 palmitoyldeoxypalmitamidoglucofuranose phosphate phosphonate;
 glucopyranose palmitoyldeoxypalmitamido phosphate phosphonate
 IT 78835-47-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and benzyloxymethylation of)
 IT 116457-74-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** and conversion of, to sodium salt)
 IT 82755-00-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** and deisopropylidenation of)
 IT 116457-67-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** and glycosidic cleavage of)
 IT 116457-77-3P 116480-20-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and hydrogenolysis of)
 IT 116457-66-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and isomerization of)
 IT 116457-68-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and phosphorylation or phosphonylation of)
 IT 110914-51-7P 116457-70-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (**preparation** and reaction of, with
 palmitoyldeoxypalmitidoglucofuranose)
 IT 116457-64-8P 116457-65-9P 116457-72-8P 116457-76-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of)
 IT **76101-30-9**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hydroxypropionitrile)
 IT **5381-99-7**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with palmitoyldeoxypalmitidoglucofuranose)

L91 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1984:2196 HCAPLUS Full-text
 DOCUMENT NUMBER: 100:2196
 TITLE: Plant growth regulation methods
 INVENTOR(S): Fritz, Charles D.; Evans, Wilbur E.; Cooke,
 Anson R.
 PATENT ASSIGNEE(S): Union Carbide Corp., USA
 SOURCE: U.S., 39 pp. Cont.-in-part of U.S. 4,374,661.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
US 4401454	A	19830830	US 1971-186461	1971 1004
			<--	
JP 58020927	B	19830426	JP 1968-37332	1968 0531
			<--	
US 4374661	A	19830222	US 1969-869386	1969 1024
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AT 7305554	A	19790815	AT 1973-5554	1973 0625
			<--	
AT 355604	B	19800310		
PRIORITY APPLN. INFO.:			US 1967-617860	A2 1967 0223
			<--	
			US 1967-693698	A2 1967 1227
			<--	
			US 1969-869386	A2 1969 1024
			<--	
			AT 1968-1750	A 1968 0223
			<--	

OTHER SOURCE(S): MARPAT 100:2196

ED Entered STN: 12 May 1984

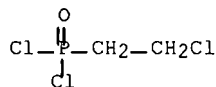
AB Phosphonic acid derivs. are phyto regulators for a variety of plant species **producing** responses such as abscission of foliage, flowers, and fruit, hastening of fruit ripening and color development, prevention of lodging, and stimulation of germination and breaking of dormancy, etc. Thus, spray application of 2-chloroethylphosphonic acid [16672-87-0] to tomatoes induced abscission of flower buds and flowers. Rates of 50-300 ppm were most effective in abscissing unpollinated flowers, whereas rates of 600 and 1000 ppm abscised both pollinated and unpollinated flowers along with a temporary dwarfing of vegetative growth, and leaf epinasty.

IT 690-12-0P 691-51-0P 88169-35-1P

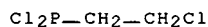
RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as phyto regulator)

RN 690-12-0 HCAPLUS

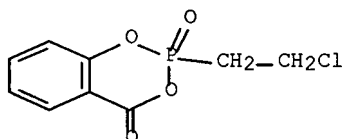
CN Phosphonic dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 691-51-0 HCAPLUS
 CN Phosphonous dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

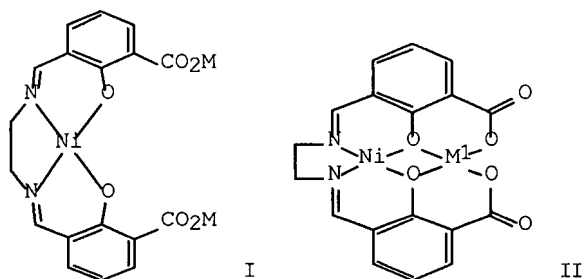


RN 88169-35-1 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(2-chloroethyl)-, 2-oxide (9CI) (CA INDEX NAME)

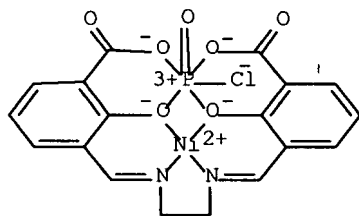


IC A01N057-00
 INCL 071076000
 CC 5-3 (Agrochemical Bioregulators)
 IT **690-12-0P 691-51-0P** 5853-72-5P 6145-31-9P
 6294-34-4P 7582-45-8P 17378-30-2P 23459-82-7P 25431-72-5P
 25431-74-7P 26271-37-4P 27366-95-6P 27366-98-9P
 27366-99-0P 29507-28-6P 53986-90-6P 88169-33-9P
 88169-34-0P **88169-35-1P** 88169-36-2P 88169-37-3P
 88169-38-4P 88169-39-5P 88169-40-8P 88185-24-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as phyto regulator)

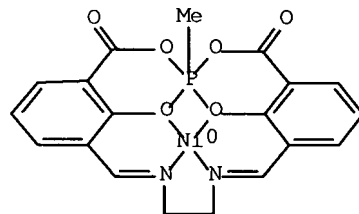
L91 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1982:85721 HCAPLUS Full-text
 DOCUMENT NUMBER: 96:85721
 TITLE: Metallic complexes as ligands: Part II -
 Nickel(II) complex of the Schiff base derived
 from 3-formylsalicylic acid and
 ethylenediamine as ligand for titanium,
 zirconium, tin, phosphorus, and boron
 AUTHOR(S): Dey, K.; Biswas, A. K.; Roy, A. K. Sinha
 CORPORATE SOURCE: Dep. Chem., Univ. Kalyani, Kalyani, 741 235,
 India
 SOURCE: Indian Journal of Chemistry, Section A:
 Inorganic, Physical, Theoretical & Analytical
 (1981), 20A(8), 848-51
 CODEN: IJCADU; ISSN: 0376-4710
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 12 May 1984
 GI



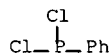
- AB Ni complexes I (M = BPh₂), II [M₁ = Cp₂Ti, Cp₂Zr (Cp = cyclopentadienyl), Me₂Sn, Ph₂Sn, MeP, PhP, P(O)Cl] were **prepared** by lithiating or silylating I (M = H) to give I (M = Li, SiMe₃) followed by treatment with Ph₂BCl, M₁Cl₂RPCl₂ (R = Me, Ph) or POCl₃, resp.
- IT **80695-21-2P 80764-22-3P**
- RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
- RN 80695-21-2 HCAPLUS
- CN Nickel, (chlorooxophosphorus) [μ-[[3,3'-[1,2-ethanediylbis(nitrilomethylidene)]bis[2-hydroxybenzoato]](4-)]-(9CI) (CA INDEX NAME)



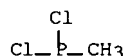
- RN 80764-22-3 HCAPLUS
- CN Nickel, (7,8-dihydro-16-methyl-16H-16,1:16,14-bis(epoxymethano)dibenzo[d,l][1,3,7,10,2]dioxadiazaphosphacyclotridecine-19,21-dione-N6,N9,O15,O17)-(9CI) (CA INDEX NAME)



- IT **644-97-3 676-83-5**
- RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with nickel Schiff base)
- RN 644-97-3 HCAPLUS
- CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)

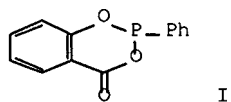


RN 676-83-5 HCAPLUS
 CN Phosphonous dichloride, P-methyl- (CA INDEX NAME)



CC 29-13 (Organometallic and Organometalloidal Compounds)
 IT 80695-22-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with chloro compds.)
 IT 80695-19-8P 80695-20-1P **80695-21-2P** 80711-06-4P
 80711-10-0P 80733-45-5P 80764-21-2P **80764-22-3P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT **644-97-3 676-83-5** 753-73-1 1135-99-5
 1271-19-8 1291-32-3 3677-81-4 10025-87-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with nickel Schiff base)

L91 ANSWER 20 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1979:421190 HCAPLUS Full-text
 DOCUMENT NUMBER: 91:21190
 TITLE: Polymerization via zwitterion. 21.
 Alternating copolymerizations of cyclic acyl
 phosphonite and phosphite with p-benzoquinones
 AUTHOR(S): Saegusa, Takeo; Kobayashi, Takatoshi; Chow,
 Tak-Yuen; Kobayashi, Shiro
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, Japan
 SOURCE: Macromolecules (1979), 12(3), 533-5
 CODEN: MAMOBX; ISSN: 0024-9297
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 12 May 1984
 GI



AB 2-Phenyl-4-oxo-5,6-benzo-1,3,2-dioxaphosphorane (I) [66737-42-6] and 2-phenoxy-4-oxo-5,6-benzo-1,3,2-dioxaphosphorane [2077-04-5] were **prepared** and polymerized as nucleophilic monomers with p-benzoquinone [106-51-4] or its derivs. as electrophilic monomers without added catalysts to give 1:1 alternating copolymers consisting of ester groups and phosphonate or phosphate groups in the main chain. The first step in the reaction **produced** a zwitterion of the phosphonium and phenoxide groups which was an

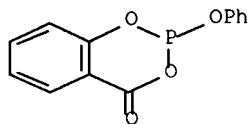
important intermediate in both the initiation and propagation steps. Spectrometry showed the copolymers to contain phosphonate ester groups.

IT 2077-04-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, with benzoquinone, mechanism of alternating)

RN 2077-04-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-phenoxy- (8CI, 9CI) (CA INDEX NAME)

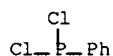


IT 644-97-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with salicylic acid)

RN 644-97-3 HCAPLUS

CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



CC 35-4 (Synthetic High Polymers)

IT 2077-04-5 66737-42-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, with benzoquinone, mechanism of alternating)

IT 101-02-0 644-97-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with salicylic acid)

L91 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:33438 HCAPLUS Full-text

DOCUMENT NUMBER: 92:33438

TITLE: Determination of bifunctional compounds. VII. Ethylphosphonothioic dichloride as a selective reagent for the trace analysis of bifunctional compounds by gas chromatography with phosphorus-specific detection

AUTHOR(S): Poole, C. F.; Singhawangcha, S.; Hu, L. E. Chen; Zlatkis, A.

CORPORATE SOURCE: Dep. Chem., Univ. Houston, Houston, TX, 77004, USA

SOURCE: Journal of Chromatography (1979), 178(2), 495-503
CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 12 May 1984

AB Ethylphosphonothioic dichloride reacts selectively with bifunctional compds. containing OH, NH₂, and COOH groups to **form** derivs. which are stable to gas chromatog. These derivs. can be determined at the low pg level with the N-P detector or with the flame photometric detector. The cyclic ethylphosphonothioic derivs. **produce** characteristic mass spectra with prominent mol. ions. The derivs. are suitable for identification purposes by gas chromatog.-mass spectrometry and the prominent ion [M-C₂H₅S]⁺ should be useful for trace anal. by single ion monitoring.

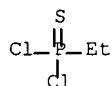
IT 993-43-1

RL: ANST (Analytical study)

(as derivatization reagent for gas chromatog. of bifunctional compds.)

RN 993-43-1 HCAPLUS

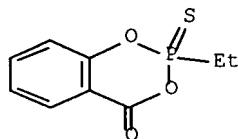
CN Phosphonothioic dichloride, P-ethyl- (CA INDEX NAME)



IT 72399-14-5

RL: PRP (Properties); ANST (Analytical study)
(mass spectra of)

RN 72399-14-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-ethyl-, 2-sulfide (9CI)
(CA INDEX NAME)

CC 80-6 (Organic Analytical Chemistry)

IT 993-43-1

RL: ANST (Analytical study)

(as derivatization reagent for gas chromatog. of bifunctional compds.)

IT 4602-02-2 60990-02-5 62824-72-0 72399-09-8 72399-10-1

72399-11-2 72399-12-3 72399-13-4 72399-14-5

72399-15-6 72399-16-7 72399-17-8

RL: PRP (Properties); ANST (Analytical study)
(mass spectra of)

L91 ANSWER 22 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:443604 HCAPLUS Full-text

DOCUMENT NUMBER: 89:43604

TITLE: **Synthesis** of different esters of
phosphonic and amidophosphoric acids with
hydroxybenzoic acidsAUTHOR(S): Vakhidova, V. V.; Makhamatkhanov, M. M.;
Bakhtiyarova, F. A.; Yuldasheva, Kh. E.;
Maksudov, N. Kh.; Akbarov, A.CORPORATE SOURCE: Tashk. Inst. Inzh. Irrig. Mekh. Sel'sk. Khoz.,
Tashkent, USSRSOURCE: Uzbekskii Khimicheskii Zhurnal (1977
, (6), 66-9

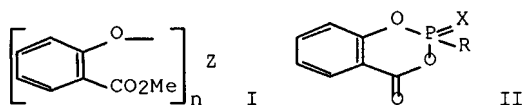
CODEN: UZKZAC; ISSN: 0042-1707

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 12 May 1984

GI



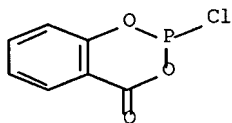
AB Hydroxybenzoic acid phosphorus esters I ($Z = P, PO, PS, n = 3$; $Z = P(O)CH_2Cl, P(S)CH_2Cl, P(S)Ph, P(O)CH_2CH_2Cl, n = 2$) (8 compds., yield 45-65%), II ($R = CH_2Cl, X = O, S$; $R = Ph, NHPH, NHC_6H_4Me-p, NHC_6H_4CO_2Et-p, NHC_6H_4NO_2-p, NHC_6H_4OMe-o, X = -$) (8 compds., yield 63 - 75%) were **prepared** Thus, heating o-HOC₆H₄CO₂H with $RP(X)Cl_2$ at 160° gave II.

IT **5381-99-7P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction with amine)

RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)

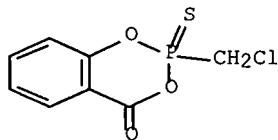


IT **66737-41-5P 66737-43-7P**

RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

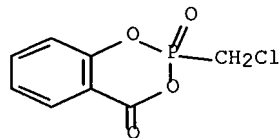
RN 66737-41-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-sulfide
(9CI) (CA INDEX NAME)



RN 66737-43-7 HCAPLUS

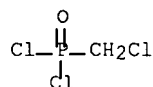
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-oxide
(9CI) (CA INDEX NAME)



IT **1983-26-2**

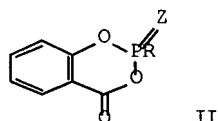
RL: RCT (**Reactant**); RACT (Reactant or reagent)

(reaction of, with salicylic acid)
 RN 1983-26-2 HCAPLUS
 CN Phosphonic dichloride, P-(chloromethyl)- (CA INDEX NAME)

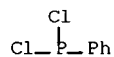


CC 29-7 (Organometallic and Organometalloidal Compounds)
 IT **5381-99-7P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with amine)
 IT 4004-52-8P 61293-69-4P 61293-70-7P 61293-71-8P 61293-72-9P
 61293-73-0P 66737-34-6P 66737-35-7P 66737-36-8P
 66737-37-9P 66737-38-0P 66737-39-1P 66737-40-4P
66737-41-5P 66737-42-6P 66737-43-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT **1983-26-2** 14939-40-3 15176-84-8
 RL: **RCT (Reactant)**; RACT (Reactant or reagent)
 (reaction of, with salicylic acid)

L91 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1978:529205 HCAPLUS Full-text
 DOCUMENT NUMBER: 89:129205
 TITLE: Cyclic esters of some phosphonic and
 amidophosphoric acids with salicylic acid
 AUTHOR(S): Makhamatkhanov, M. M.; Vakhidova, V. V.;
 Bakhtiyarova, F. A.; Yuldasheva, Kh. E.;
 Maksudov, N. Kh.
 CORPORATE SOURCE: Tashkent. Inst. Inzh. Irrig. Mekh. Sel'sk.
 Khoz., Tashkent, USSR
 SOURCE: Deposited Doc. (1976), VINITI
 2152-76, 6 pp. Avail.: VINITI
 DOCUMENT TYPE: Report
 LANGUAGE: Russian
 ED Entered STN: 12 May 1984
 GI

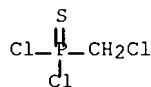


AB O-HOC₆H₄CO₂H (I) cyclized with RP(Z)Cl₂ (R = Ph, Z = :; R = ClCH₂, Z = O, S) at 160° to give 70-5% cyclic esters II. Cyclization of I with PCl₃ gave 80% II (R = Cl, Z = :), which reacted with R₁NH₂ (R₁ = Ph, 4-tolyl, 2-anisyl, 4-EtO₂CC₆H₄, 2-O₂NC₆H₄) in C₆H₆ to give the corresponding II (R = NHR₁, Z = :) in 63-75% yield.
 IT **644-97-3 1983-27-3 2155-78-4**
 RL: **RCT (Reactant)**; RACT (Reactant or reagent)
 (cyclization of, with salicylic acid)
 RN 644-97-3 HCAPLUS
 CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



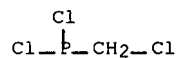
RN 1983-27-3 HCAPLUS

CN Phosphonothioic dichloride, (chloromethyl)- (6CI, 7CI, 8CI, 9CI)
(CA INDEX NAME)



RN 2155-78-4 HCAPLUS

CN Phosphonous dichloride, (chloromethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

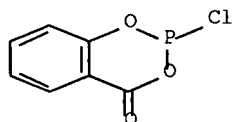


IT 5381-99-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and amination of)

RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)

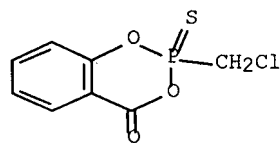


IT 66737-41-5P 66737-43-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

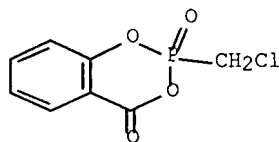
RN 66737-41-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-sulfide
(9CI) (CA INDEX NAME)



RN 66737-43-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-oxide
(9CI) (CA INDEX NAME)



CC 25-18 (Noncondensed Aromatic Compounds)
Section cross-reference(s): 29
IT Ring closure and **formation**
(of salicylic acid with phosphorus trichloride and with
phosphinic chlorides)
IT **644-97-3 1983-27-3 2155-78-4**
7719-12-2
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(cyclization of, with salicylic acid)
IT **5381-99-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and amination of)
IT 61293-69-4P 61293-70-7P 61293-71-8P 61293-72-9P
61293-73-0P **66737-41-5P** 66737-42-6P
66737-43-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

L91 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1974:82005 HCAPLUS Full-text

DOCUMENT NUMBER: 80:82005

TITLE: **Synthesis** of acyl chlorides and
bromides from phosphosalicyclic acid halides
AUTHOR(S): Hanuise, J.; Smolders, R. R.; Voglet, N.;
Wollast, P.

CORPORATE SOURCE: Serv. Chim. Org., Inst. Ind. Ferment.,
Brussels, Belg.

SOURCE: Ingenieur Chimiste (Brussels) (1973
, 55(267-8), 3-6
CODEN: INCIAB; ISSN: 0020-1162

DOCUMENT TYPE: Journal

LANGUAGE: French

ED Entered STN: 12 May 1984

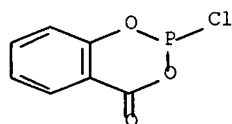
AB The salicyloyl chloride (I) converts alkanolic acids, BzOH, or p-MeC6H4SO3H to their
acid chlorides in 60-97% yields. Similarly, II (**prepared** from Br and III) reacts with
BzOH, Me3CCO2H, or Me(CH2)4CO2H to give 64-87% yields of the acid bromides, and also
some acid chlorides.

IT **5381-99-7P 6314-18-7P**

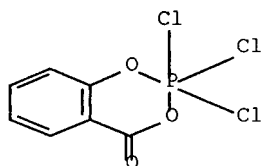
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

RN 5381-99-7 HCAPLUS

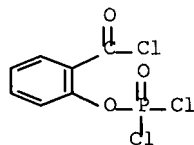
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



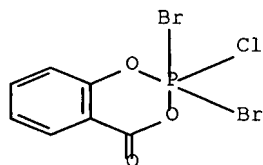
RN 6314-18-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2,2,2-trichloro-2,2-dihydro-
 (9CI) (CA INDEX NAME)



IT 6099-41-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reagent, for acyl halide **preparation**)
 RN 6099-41-8 HCAPLUS
 CN Phosphorodichloridic acid, 2-(chlorocarbonyl)phenyl ester (9CI)
 (CA INDEX NAME)



IT 51499-40-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reagent, for **preparation** of acyl bromides)
 RN 51499-40-2 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2,2-dibromo-2-chloro-2,2-dihydro- (9CI) (CA INDEX NAME)



CC 23-17 (Aliphatic Compounds)
 Section cross-reference(s): 25
 IT Acid bromides
 Acid chlorides
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of, reagent for)
 IT 142-62-1, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid bromide **preparation** from, reagent for)
 IT 64-19-7, reactions 75-96-7 76-03-9, reactions 79-09-4,
 reactions 104-15-4, reactions 107-92-6, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid chloride **formation** from, reagent for)

IT 65-85-0, reactions 75-98-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid halides **preparation** from, reagents for)

IT 75-36-5P 76-02-8P 79-03-8P 98-59-9P 98-88-4P 141-75-3P
 618-32-6P 3282-30-2P **5381-99-7P 6314-18-7P**
 27644-18-4P 34718-47-3P 51499-41-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of)

IT **6099-41-8**
 RL: RCT (**Reactant**); RACT (Reactant or reagent)
 (reagent, for acyl halide **preparation**)

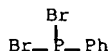
IT **51499-40-2**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reagent, for **preparation** of acyl bromides)

L91 ANSWER 25 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1972:501760 HCAPLUS Full-text
 DOCUMENT NUMBER: 77:101760
 TITLE: **Preparation** of phosphorus(III) and
 phosphorus(V) acid bromides
 AUTHOR(S): Arbuzov, B. A.; Krupnov, V. K.; Vizel, A. O.
 CORPORATE SOURCE: Inst. Org. Fiz. Khim. im. Arbuzova, Kazan,
 USSR
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya
 Khimicheskaya (1972), (5), 1193-4
 CODEN: IASKA6; ISSN: 0002-3353
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 ED Entered STN: 12 May 1984

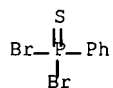
AB PhPCl₂ and PBr₃ gave PCl₃ and 82% PhPBr₂; Bu₂NPCl₂ gave 78% Bu₂NPBr₂; and (o-HOC₆H₄O)PClOH gave the Br analog. MePOCl₂ gave 89% MePOBr₂ and PhPSCl₂ gave 89% PhPSBr₂. The best temperature for the reaction was 170-90°.

IT **1073-47-8P 6231-02-3P 19430-64-9P**
37912-73-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**preparation** of)

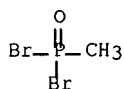
RN 1073-47-8 HCAPLUS
 CN Phosphonous dibromide, phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



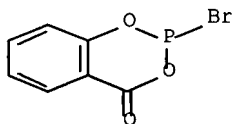
RN 6231-02-3 HCAPLUS
 CN Phosphonothioic dibromide, phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 19430-64-9 HCAPLUS
 CN Phosphonic dibromide, methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 37912-73-5 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- (9CI) (CA INDEX NAME)



CC 29-7 (Organometallic and Organometalloidal Compounds)
 IT 1073-47-8P 6231-02-3P 19430-64-9P
 37912-72-4P 37912-73-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L91 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1966:35532 HCAPLUS Full-text

DOCUMENT NUMBER: 64:35532

ORIGINAL REFERENCE NO.: 64:6536b-e

TITLE: Structure of **products** from reactions of phosphorus pentachloride with phenyl salicylate and 2-hydroxybenzophenone. Related compounds. 31P N.M.R. and chemical studies
 AUTHOR(S): Pinkus, A. G.; Waldrep, P. G.; Ma, S. Y.
 CORPORATE SOURCE: Baylor Univ., Waco, TX
 SOURCE: Journal of Heterocyclic Chemistry (1965), 2(4), 357-65
 CODEN: JHTCAD; ISSN: 0022-152X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 64:35532

ED Entered STN: 22 Apr 2001

GI For diagram(s), see printed CA Issue.

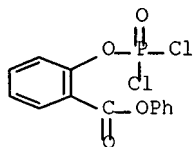
AB The compds. obtained from the reactions of Ph salicylate and 2-hydroxybenzophenone with PCl₅ have been shown to have structures I and II, resp., rather than alternative heterocyclic structures on the basis of the comparison of the 31P chemical shifts with appropriate reference compds. and addnl. chemical evidence. I reacts with 2 equivs. PhOH in the presence of 2 equivs. Et₃N to **form** mainly III (substitution on P). III is confirmed via 31P N.M.R. and ir spectra and the fact that partial hydrolysis **forms**. IV is obtained from the reaction of V with PhOH (only substitution possible). A mechanism with initial reaction of PCl₅ (as tetrachlorophosphonium ion) on the phenolic hydroxyl is postulated on the basis of the available evidence. The 31P chemical shifts for VI and VII confirm these structures as heterocyclic in accord with previous chemical evidence. VI is of historical importance as one of the first 3 cyclic structures ever published in the classical paper in which Couper announced his structural theory of organic chemistry.

IT 5382-01-4

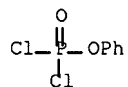
(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 5382-01-4 HCAPLUS

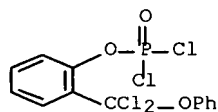
CN Salicylic acid, phenyl ester, phosphorodichloridate (7CI, 8CI)
 (CA INDEX NAME)



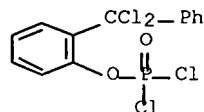
IT 770-12-7, Phenyl phosphorodichloridate 5381-95-3
 , o-Cresol, α,α -dichloro- α -phenoxy-,
 phosphorodichloridate 5381-96-4, o-Cresol,
 α,α -dichloro- α -phenyl-, phosphorodichloridate
 5381-98-6, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-,
 2-oxide 5381-99-7, 4H-1,3,2-Benzodioxaphosphorin-4-one,
 2-chloro-
 (nuclear magnetic resonance of)
 RN 770-12-7 HCAPLUS
 CN Phosphorodichloridic acid, phenyl ester (CA INDEX NAME)



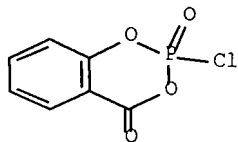
RN 5381-95-3 HCAPLUS
 CN Phosphorodichloridic acid, 2-(dichlorophenoxymethyl)phenyl ester
 (9CI) (CA INDEX NAME)



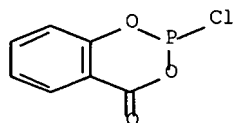
RN 5381-96-4 HCAPLUS
 CN Phosphorodichloridic acid, 2-(dichlorophenylmethyl)phenyl ester
 (9CI) (CA INDEX NAME)



RN 5381-98-6 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA
 INDEX NAME)



RN 5381-99-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



CC 35 (Noncondensed Aromatic Compounds)
 IT 93-46-9 **5382-01-4** 5991-10-6 13929-83-4
 (Derived from data in the 7th Collective Formula Index
 (1962-1966))
 IT 115-86-6, Triphenyl phosphate **770-12-7**, Phenyl
 phosphorodichloridate 2007-97-8, 1,3,2-Benzodioxaphosphole,
 2,2,2-trichloro-2,2-dihydro- 2524-64-3, Phenyl
 phosphorochloridate, (PhO)2ClPO 2524-64-3, Phenyl
 phosphorochloridite 4850-55-9, 1,3,2-Dioxaphosphole,
 2,2-dihydro-2,2,2-trimethoxy-4,5-diphenyl- **5381-95-3**,
 o-Cresol, α,α -dichloro- α -phenoxy-,
 phosphorodichloridate **5381-96-4**, o-Cresol,
 α,α -dichloro- α -phenyl-, phosphorodichloridate
 5381-97-5, o-Cresol, α,α -dichloro- α -phenoxy-,
 diphenyl phosphate **5381-98-6**, 4H-1,3,2-
 Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide **5381-99-7**
 , 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- **5382-00-3**,
 Phosphorochloridous acid, diphenyl ester
 (nuclear magnetic resonance of)
 IT 2524-64-3P, Phosphorochloridic acid, diphenyl ester
 RL: PREP (Preparation)
 (preparation of)

L91 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1963:481907 HCAPLUS Full-text
 DOCUMENT NUMBER: 59:81907
 ORIGINAL REFERENCE NO.: 59:15162f-h,15163a-d
 TITLE: Phosphorus-fluorine chemistry. VII.
Synthesis and coordination chemistry
 of the fluorophosphites
 AUTHOR(S): Schmutzler, Reinhard
 CORPORATE SOURCE: E. I. du Pont de Nemours and Co., Inc.,
 Wilmington, DE
 SOURCE: Chemische Berichte (1963), 96(9),
 2435-50
 CODEN: CHBEAM; ISSN: 0009-2940
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 ED Entered STN: 22 Apr 2001
 GI For diagram(s), see printed CA Issue.
 AB cf. CA 58, 11393g, 12152b. A series of fluorophosphites (RO)nPFa3-n (R = a univalent
 hydrocarbon group) (n = 1 or 2) and R'(OPF2)2 (R' = a bivalent hydrocarbon group) was
prepared by halogen exchange from the corresponding Cl analogs. The reaction of these

fluorophosphites with Ni(CO)₄ (I), cycloheptatrienemolybdenum tricarbonyl (II), or Mo(CO)₆ (III) led to tetrasubstitution **products** of NiO and MoO(CO)₃ complexes of considerable stability. The reaction of I with (CH₂OPF₂)₂ (IV) and p-C₆H₄(OPF₂)₂ (V) yielded coordination polymers with NiO. The properties of the new coordination compds. are discussed, p-C₆H₄(OPCl₂)₂ (100 g.) heated slowly under a stream of N to a melt, treated during 1 hr. with 85 g. SbF₃, kept at 50-60°, and distilled yielded 70 g. V, b₁₂ 59°, n_D 1.4488. Similarly were **prepared** the following compds. (% yield, b.p./mm., n_D/t°, reaction time in hrs., reaction temperature, and mole amts. chlorophosphite analog and SbF₃ used): ProPF₂ (VI), 81, 44.5°/760, 1.3400/20, 2.5, 50°, 0.6, 0.5; BuOPF₂, 88, 75°/760, 1.3580/20, 0.5 and 2, 40-50° and 75°, 0.3, 0.3; CH₂:CHCH₂OPF₂, 83 5, 42°/760, -, 1 and 2, 30 and 45°, 0.8, 0.73; PhOPF₂ (VII), 86.5, 58°/60, 1.4575/27, 1 and 1, 50-60 and 100°, 1, 0.95; ethylene fluorophosphite, 85, 48°/170, 1.4003/23.5, 3, 40°, 0.26, 0.13; 2-fluoro-1,3,2-benzodioxaphosphole (VIII), 89, 36.5°/6, 1.5092/25, 2, 50 100°, 0.3, 0.15; IV, 85, 50°/180, 1.3523/26, 1, 50-60°, 0.3, 0.475. Cl analog (0.8 mole) of VIII and 1.5 mole NaF in 200 cc. tetramethylene sulfone, heated 2.5 hrs. at 80°, yielded 71.5% VIII, b₈ 38°, n_D 1.5080. IX (0.8 mole), 250 g. KSO₂F, and 250 cc. C₆H₆ heated 12 hrs. at 80° gave 17% F analog of IX, b_{0.15-0.2} 44-7°, n_D 1.5390. VI (50.9 g.) treated dropwise with stirring under N with 11.9 g. I, stirred 20 hrs. below 50°, cooled to 0°, heated 5 hrs. at 110° in an autoclave, cooled to -80°, vented, and distilled yielded 38.0 g. Ni₄VI, b_{0.5} 140.5-43°, n_D 1.4321, magnetic moment, μ_{eff.}, 0.38 Bohr magnetons. Ni₄PhOPCl₂ (12.6 g.), m. 107-8°, in 130 cc. C₆H₆ containing 30 g. powdered KSO₂F, stirred 6 hrs. under N, filtered hot, and evaporated gave Ni₄VI. VII (41.0 g.) treated dropwise under N with 8.6 g. I, stirred 16 hrs., heated 1 hr. at 90°, 1 hr. at 120°, and then to 150°, and the mixture pumped at room temperature yielded 60.4 g. Ni₄VII, b_{0.5}, 60°, n_D 1.5412, μ_{eff.} 0.27 Bohr magnetons. I (8.5 g.) added dropwise under N to 47.5 g. VIII and heated gradually during 3 hrs. to 130° yielded 33.5 g. Ni₄VIII, leaflets, m. 129-30° (C₆H₆). I (6.85 g.) added dropwise with stirring under N to 24.2 g. IV, stirred 20 hrs. at room temperature, heated gradually, treated with an addnl. 9.9 g. IV, kept 20 hrs. at 80°, cooled, powdered, and washed with MeOH and petr. ether yielded (Ni₂IV)_n which turns slightly yellow on heating to 220° but does not melt; it is insol. in all common organic solvents. I (6 g.) added dropwise to 21 g. V, stirred 20 hrs. at 20°, heated during 3 hrs. to 80°, kept 10 hrs. at 80-100°, cooled, powdered, and dried 20 hrs. at 80°/0.1 mm. gave (Ni₂V)_n, insol. in organic solvents; it turns slightly dark on heating to 280°, but does not decompose or melt. I (11.9 g.) treated dropwise under a stream of N with 12.3 g. V, stirred 20 hrs. at room temperature, treated again with 8.5 g. I, stirred 8 hrs. at 50°, and evaporated yielded the latex-like [Ni(CO)₂V]_n. II (2.7 g.) treated under N below 40° with 12.8 g. VI, stirred 0.5 hr., pumped at 30°/1 mm., and extracted with petr. ether, and the extract worked up gave 3.0 g. Mo(CO)₃3VI, b_{0.05} 125°.

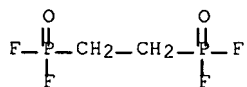
II (2.7 g.) with 14.3 g. VII yielded 3.9 g. Mo(CO)₃3VII, m. 47° (hexane at -80°). II (2.7 g.) with 15.8 g. VIII gave 4.0 g. Mo(CO)₃3VIII, m. 89.5-91° (hexane). III (26.4 g.) and 76.8 g. VI cooled under N to -190°, evacuated to 0.5 mm., heated 4 hrs. to 120°, cooled to -80°, vented, cooled to -190°, evacuated, heated 12 hrs. at 180°, vented again, and distilled gave the following fractions: (1) 3.8 g., b_{0.2} 110-30°, n_D 1.4522; (2) 5.8 g., b_{0.2} 130-45°, n_D 1.4740; (3) 5.0 g., b_{0.2} 145-50°, n_D 1.4780; (4) 41.0 g., b_{0.25} 145-60°, n_D 1.4780, and left a substantial black residue; the combined fractions 3 and 4 fractionated yielded 16.0 g. Mo(CO)₃3VIa.

IT 871-34-1

(Derived from data in the 7th Collective Formula Index
(1962-1966))

RN 871-34-1 HCAPLUS

CN Phosphonic difluoride, 1,2-ethanediylbis- (9CI) (CA INDEX NAME)



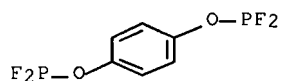
IT 830-44-4, p-Phenylene phosphorodifluoridite

(Ni complexes, polymers)

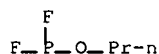
RN 830-44-4 HCAPLUS

CN Phosphorodifluoridous acid, 1,4-phenylene ester (9CI) (CA INDEX

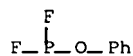
NAME)



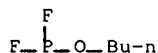
IT 3964-95-2, Propyl phosphorodifluoridite 3965-01-3
 , Phenyl phosphorodifluoridite
 (metal complexes)
 RN 3964-95-2 HCAPLUS
 CN Phosphorodifluoridous acid, propyl ester (8CI, 9CI) (CA INDEX
 NAME)



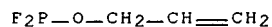
RN 3965-01-3 HCAPLUS
 CN Phosphorodifluoridous acid, phenyl ester (8CI, 9CI) (CA INDEX
 NAME)



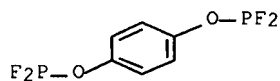
IT 693-00-5P, Butyl phosphorodifluoridite 820-61-1P
 , Allyl phosphorodifluoridite, (C3H5O)PF2 830-44-4P,
 p-Phenylene phosphorodifluoridite 1583-55-7P,
 4H-1,2,3-Benzodioxaphosphorin-4-one, 2-fluoro- 3964-95-2P
 , Propyl phosphorodifluoridite 3965-00-2P, Ethylene
 phosphorodifluoridite, F2P(OC2H4O)PF2 3965-01-3P, Phenyl
 phosphorodifluoridite 15406-89-0P, Molybdenum,
 tricarbonyltris(phenyl phosphorodifluoridite)- 15612-38-1P
 , Molybdenum, tricarbonyltris(propyl phosphorodifluoridite)-
 15693-97-7P, Nickel, tetrakis(propyl
 phosphorodifluoridite)- 15977-41-0P, Nickel,
 tetrakis(phenyl phosphorodifluoridite)-
 RL: PREP (Preparation)
 (preparation of)
 RN 693-00-5 HCAPLUS
 CN Phosphorodifluoridous acid, butyl ester (8CI, 9CI) (CA INDEX
 NAME)



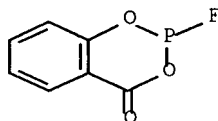
RN 820-61-1 HCAPLUS
 CN Phosphorodifluoridic acid, 2-propenyl ester (9CI) (CA INDEX NAME)



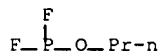
RN 830-44-4 HCAPLUS
 CN Phosphorodifluoridous acid, 1,4-phenylene ester (9CI) (CA INDEX NAME)



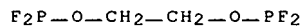
RN 1583-55-7 HCAPLUS
 CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-fluoro- (9CI) (CA INDEX NAME)



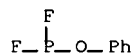
RN 3964-95-2 HCAPLUS
 CN Phosphorodifluoridous acid, propyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3965-00-2 HCAPLUS
 CN Phosphorodifluoridous acid, ethylene ester (8CI) (CA INDEX NAME)

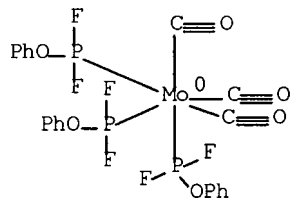


RN 3965-01-3 HCAPLUS
 CN Phosphorodifluoridous acid, phenyl ester (8CI, 9CI) (CA INDEX NAME)

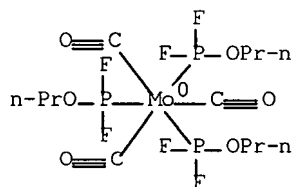


RN 15406-89-0 HCAPLUS
 CN Molybdenum, tricarbonyltris(phenyl phosphorodifluoridite-κP)-

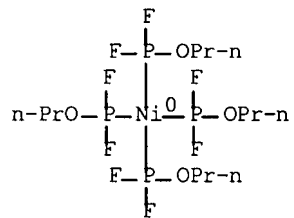
(9CI) (CA INDEX NAME)



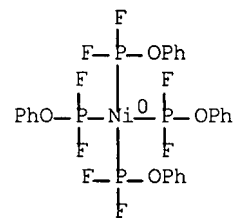
RN 15612-38-1 HCAPLUS

CN Molybdenum, tricarbonyltris(propyl phosphorodifluoridite-κP)-
(9CI) (CA INDEX NAME)

RN 15693-97-7 HCAPLUS

CN Nickel, tetrakis(propyl phosphorodifluoridite-κP)- (9CI)
(CA INDEX NAME)

RN 15977-41-0 HCAPLUS

CN Nickel, tetrakis(phenyl phosphorodifluoridite-κP)-, (T-4)-
(9CI) (CA INDEX NAME)

CC 33 (Aliphatic Compounds)
 IT 871-34-1
 (Derived from data in the 7th Collective Formula Index
 (1962-1966))
 IT 830-44-4, p-Phenylene phosphorodifluoridite
 (Ni complexes, polymers)
 IT 1526-24-5, o-Phenylene phosphorofluoridite, (C₆H₄O₂)FP
 3964-95-2, Propyl phosphorodifluoridite 3965-01-3
 , Phenyl phosphorodifluoridite
 (metal complexes)
 IT 693-00-5P, Butyl phosphorodifluoridite 765-40-2P,
 Ethylene phosphorofluoridite, (C₂H₄O₂)PF 765-40-2P,
 1,3,2-Dioxaphospholane, 2-fluoro- 820-61-1P, Allyl
 phosphorodifluoridite, (C₃H₅O)PF₂ 830-44-4P, p-Phenylene
 phosphorodifluoridite 1526-24-5P, o-Phenylene
 phosphorofluoridite, (C₆H₄O₂)FP 1583-55-7P,
 4H-1,2,3-Benzodioxaphosphorin-4-one, 2-fluoro- 1583-55-7P
 , Phosphorofluoridous acid, ester with salicylic acid, cyclic
 anhydride 3964-95-2P, Propyl phosphorodifluoridite
 3965-00-2P, Ethylene phosphorodifluoridite, F₂P(OC₂H₄O)PF₂
 3965-01-3P, Phenyl phosphorodifluoridite
 15406-89-0P, Molybdenum, tricarbonyltris(phenyl
 phosphorodifluoridite)- 15530-43-5P, Molybdenum,
 tricarbonyltris(o-phenylene phosphorofluoridite)- 15609-54-8P,
 Nickel, tetrakis(o-phenylene phosphorofluoridite)-
 15612-38-1P, Molybdenum, tricarbonyltris(propyl
 phosphorodifluoridite)- 15693-97-7P, Nickel,
 tetrakis(propyl phosphorodifluoridite)- 15977-41-0P,
 Nickel, tetrakis(phenyl phosphorodifluoridite)-
 RL: PREP (Preparation)
 (preparation of)

L91 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1962:436466 HCAPLUS Full-text
 DOCUMENT NUMBER: 57:36466
 ORIGINAL REFERENCE NO.: 57:7311d-g, 7312a-c
 TITLE: Thiophosphonates
 INVENTOR(S): Schrader, Gerhard
 PATENT ASSIGNEE(S): Farbenfabriken Bayer A.-G.
 SOURCE: 51 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 608802		19620404	BE	
DE 1150387			DE	
GB 967505			GB	
US 3209020		19650928	US 1961-141587	1961
				0929
PRIORITY APPLN. INFO.:			DE	
				1960
				1005

ED Entered STN: 22 Apr 2001
 AB RPl2 reacted in the presence of a tertiary base with R'SH to give RP(SR')Cl (I). I
 with mercaptans, thiophenols, alcs. or phenols gave RP(SR')XR' (X = S or O) (II). II
 on addition of S yielded RP(S)(SR')XR' or on oxidation with H₂O₂ RP(O)(SR')XR' (III).
 E.g. to 61 g. EtSC₂H₄SH and 50 g. pyridine dissolved in 400 ml. toluene 79 g.
 EtP(SEt)Cl (b1 50°) was added slowly in a N atmospheric After stirring 1 hr. at 30° 16
 g. S was added. The temperature rose to 90°. After cooling, the mixture was poured

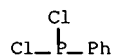
into 500 ml. H₂O. The oil that separated was collected, washed with dilute HCl and 3% NaHCO₃ and distilled yielding 88 g. EtP(S)(SEt)SC₂H₄SEt, b0.01 94°. III were **prepared** analogously replacing the S by 36% H₂O₂. The I used as intermediates were: MeP(SMe)Cl, b12 45°; MeP(SEt)Cl, b1 45°; Me₂C:CHP(SEt)(Cl, b1 76°; Me₂CC(:CMe₂)P(SEt)Cl, b1 96°; p-ClC₆H₄P(SEt)Cl, b1 122°; PhP(SEt)Cl, b1 92°. The following compds. RP(S)(SEt)R' were **prepared** in good yields (R, R', b0.01 given): Et, EtSC₂H₄O, 86°; Et, Et₂NC₂H₄S, 97°; Et, p-MeSC₆H₄O, 110°; Et, 3,4-Me(MeS)C₆H₃O, 112°; Et, 2,4-Cl₂C₆H₃O, -; Et, p-ClC₆H₄O, 104°; Et, p-ClC₆H₄S, -; Et, PhS, -; Et, 2,4-Cl(tert-Bu)C₆H₃O, -; Et, C₆H₁₁S, 85°; Et, EtO₂CCH₂S, 86°; Et, p-MeSC₆H₄S, -; Ph, EtSC₂H₄O, 150°; p-ClC₆H₄, EtSC₂H₄O, -; Me₂C:CH, EtSC₂H₄O, 122°; Me₃CC(CMe₂), EtSC₂H₄O, -; Ph, EtSC₂H₄S, 128°; p-ClC₆H₄, EtSC₂H₄S, -; Me₂C:CH, EtSC₂H₄S, -; Me₂C:C(CMe₃), EtSC₂H₄S, -; Et, tertBuO, -; Me, EtSC₂H₄O, 86°; Et, Cl₃CCH₂O, 72°; Et, Me₃CCHMeO, 68°; Me, p-ClC₆H₄O, 110°; Me, EtSC₂H₄S, 98°; Me, PhS, -; Me, p-MeSC₆H₄S, -; Me, 3,4-Me-(MeS)C₆H₃O, -; Me, p-ClC₆H₄S, 112°; Me, 2,4-Cl(tert-Bu)C₆H₃O, -; Me, p-O₂NC₆H₄O, -; Et, p-O₂NC₆H₄O, -; Me, p-MeSC₆H₄O, -; Me, EtO₂CCH₂S, 82°; Et, 2,4,5-Cl₃C₆H₂O, -; Me, Me₃CCHMeO, 68°; Me, 2,4,5-Cl₃C₆H₂O, -; Me, 2,4-Cl₂C₆H₃O, -; Me, tert-BuO, -. Also **prepared** were MeP(S)(SMe)(OC₂H₄SEt), b0.01 81° and EtP(S)(SMe)OC₂H₄SEt, b0.01 86°. The following compds. RP(O)(SEt)R' were **prepared** (R, R', b0.01 given): Et, p-Cl-C₆H₄O, 102°; Et, p-MeSC₆H₄O, 108°; Et, 2,4-Cl₂C₆H₃O, 114°; Et, 3,4-Me(MeS)C₆H₃O, -; Et, Et₂NC₂H₄S, 98°; Et, EtSC₂H₄O, 83°; Et, PhS, -; Et, p-ClC₆H₄O, -; Et, 2,4-Cl(tert-Bu)C₆H₃O, -; Et, EtSC₂H₄S, -; Et, EtO₂CCH₂S, 88°; Et, C₆H₁₁S, 84°; Et, p-MeSC₆H₄S, -; Me, EtSC₂H₄O, 84°; Me, p-ClC₆H₄O, 108°; Me, EtSC₂H₄S, 96°; Me, 3,4-Me(MeS)C₆H₃O, 112°; Me, p-ClC₆H₄O, 113°; Me, PhS, 98°; Me, p-MeSC₆H₄S, -; Me, 2,4-Cl(tert-Bu)C₆H₃O, -; Me, p-MeSC₆H₄O, 105°; Me, p-NO₂C₆H₄O, -; Et, p-O₂NC₆H₄O, -; Me, EtO₂CCH₂S, 82°; Me, Et₂NC₂H₄S, 79°; Et, 2,4,5-Cl₃C₆H₂O, -; Me, 2,4,5-Cl₃C₆H₂O, -; Me, 2,4-Cl₂C₆H₃O, -. Also **prepared** was EtP(O)(SEt)OC₂H₄SEt, b0.01 84.

IT 644-97-3P, Phosphonous dichloride, phenyl-

RL: PREP (Preparation)
(preparation of)

RN 644-97-3 HCAPLUS

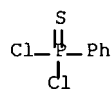
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



IT 3497-00-5, Phosphonothioic dichloride, phenyl-
(sulfur removal from)

RN 3497-00-5 HCAPLUS

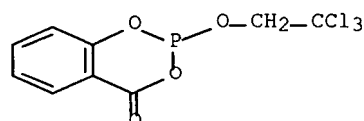
CN Phosphonothioic dichloride, P-phenyl- (CA INDEX NAME)



IT 6083-02-9, Ethanol, 2,2,2-trichloro-, ester with salicylic
acid phosphite cyclic anhydride
(O-esters with S-Et ethylphosphonodithioate)

RN 6083-02-9 HCAPLUS

CN Salicylic acid, 2,2,2-trichloroethyl hydrogen phosphite, cyclic
anhydride (7CI, 8CI) (CA INDEX NAME)



CC 33 (Organometallic and Organometalloidal Compounds)
 IT 644-97-3P, Phosphonous dichloride, phenyl- 3070-10-8P,
 Phosphonothioic acid, methyl-, O-ethyl O-2,4,5-trichlorophenyl
 ester 6588-28-9P, Phosphonochloridothious acid, ethyl-, ethyl
 ester 14443-47-1P, Phosphonothioic acid, methyl-, S-ethyl
 O-p-nitrophenyl ester 17534-63-3P, Phosphonodithioic acid,
 methyl-, O-p-chlorophenyl S-Et ester 23588-02-5P,
 Phosphonochloridothious acid, phenyl-, ethyl ester 29689-08-5P,
 Phosphonothioic acid, ethyl-, S-ethyl O-2,4,5-trichlorophenyl
 ester 31650-49-4P, Phosphonodithioic acid, methyl-, S-ethyl S-Ph
 ester 89600-02-2P, Phosphonodithioic acid, methyl-,
 O-[2-(ethylthio)ethyl] S-Me ester 89799-32-6P,
 Phosphonochloridothious acid, methyl-, ethyl ester 89980-16-5P,
 Phosphonodithioic acid, ethyl-, O-[2-(ethylthio)ethyl] S-Me ester
 89980-18-7P, Phosphonodithioic acid, methyl-, S-ethyl
 O-[2-(ethylthio)ethyl] ester 89980-24-5P, Phosphonothioic acid,
 ethyl-, O-[2-(ethylthio)ethyl] S-Me ester 89980-26-7P,
 Phosphonothioic acid, methyl-, S-ethyl O-[2-(ethylthio)ethyl]
 ester 89980-32-5P, Phosphonotrithioic acid, methyl-, ethyl
 2-(ethylthio)ethyl ester 90110-51-3P, Phosphonodithioic acid,
 methyl-, S-ethyl S-[2-(ethylthio)ethyl] ester 90229-75-7P,
 Phosphonochloridothious acid, methyl-, methyl ester 90324-36-0P,
 Phosphonodithioic acid, ethyl-, S-ethyl O-[2-(ethylthio)ethyl]
 ester 90324-37-1P, Phosphonodithioic acid, ethyl-, S-ethyl
 S-[2-(ethylthio)ethyl] ester 90324-56-4P, Phosphonotrithioic
 acid, ethyl-, ethyl 2-(ethylthio)ethyl ester 90416-13-0P,
 Phosphonotrithioic acid, methyl-, p-chlorophenyl Et ester
 90482-12-5P, Phosphonodithioic acid, methyl-, O-tert-butyl S-Et
 ester 90644-53-4P, Phosphonotrithioic acid, methyl-, ethyl Ph
 ester 90723-07-2P, Phosphonodithioic acid, methyl-,
 S-[2-(diethylamino)ethyl] S-Et ester 90886-99-0P,
 Phosphonodithioic acid, ethyl-, O-tert-butyl S-Et ester
 90945-39-4P, Phosphonotrithioic acid, ethyl-, p-chlorophenyl Et
 ester 91011-33-5P, Phosphonodithioic acid, methyl-, S-ethyl
 O-[p-(methylthio)phenyl] ester 91011-34-6P, Phosphonodithioic
 acid, methyl-, S-ethyl S-[p-(methylthio)phenyl] ester
 91011-42-6P, Phosphonothioic acid, methyl-, S-ethyl
 O-[p-(methylthio)phenyl] ester 91011-56-2P, Phosphonotrithioic
 acid, ethyl-, ethyl Ph ester 91011-57-3P, Phosphonotrithioic
 acid, methyl-, ethyl p-(methylthio)phenyl ester 91134-91-7P,
 Phosphonodithioic acid, ethyl-, S-[2-(diethylamino)ethyl] S-Et
 ester 91135-03-4P, Phosphonotrithioic acid, ethyl-,
 2-(diethylamino)ethyl Et ester 91343-95-2P, Phosphonodithioic
 acid, ethyl-, S-cyclohexyl S-Et ester 91343-97-4P,
 Phosphonodithioic acid, (2-methylpropenyl)-, S-ethyl
 O-[2-(ethylthio)ethyl] ester 91344-26-2P, Phosphonotrithioic
 acid, ethyl-, cyclohexyl Et ester 91344-27-3P,
 Phosphonotrithioic acid, (2-methylpropenyl)-, ethyl
 2-(ethylthio)ethyl ester 91470-04-1P, Phosphonochloridothious
 acid, (2-methylpropenyl)-, ethyl ester 91499-07-9P,
 Phosphonodithioic acid, ethyl-, S-ethyl O-2,2,2-trichloroethyl
 ester 91801-46-6P, Phosphonodithioic acid, (p-chlorophenyl)-,
 S-ethyl O-[2-(ethylthio)ethyl] ester 92102-56-2P,
 Phosphonothioic acid, methyl-, O-(4-tert-butyl-2-chlorophenyl)
 S-Et ester 92148-17-9P, Phosphonodithioic acid, ethyl-, S-ethyl
 O-[p-(methylthio)phenyl] ester 92148-20-4P, Phosphonodithioic
 acid, methyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester
 92148-22-6P, Phosphonothioic acid, ethyl-, S-ethyl
 O-[p-(methylthio)phenyl] ester 92257-86-8P, Phosphonotrithioic
 acid, methyl-, ethyl ester, ester with Et mercaptoacetate
 92257-86-8P, Acetic acid, mercapto-, ethyl ester, ester with Et
 methylphosphonotrithioate 92257-87-9P, Phosphonodithioic acid,
 methyl-, S-ethyl ester, S-ester with Et mercaptoacetate
 92257-87-9P, Acetic acid, mercapto-, ethyl ester, S-ester with

S-Et methylphosphonodithioate 92329-01-6P, Phosphonodithioic acid, ethyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 92329-03-8P, Phosphonothioic acid, ethyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 92401-66-6P, Phosphonodithioic acid, methyl-, S-ethyl O-p-nitrophenyl ester 92401-84-8P, Phosphonochloridithious acid, (p-chlorophenyl)-, ethyl ester 92659-79-5P, Acetic acid, mercapto-, ethyl ester, ester with Et ethylphosphonotrithioate 92659-79-5P, Phosphonotrithioic acid, ethyl-, ethyl ester, ester with Et mercaptoacetate 92659-84-2P, Acetic acid, mercapto-, ethyl ester, S-ester with S-Et ethylphosphonodithioate 92706-82-6P, Phosphonodithioic acid, methyl-, S-ethyl O-2,4,5-trichlorophenyl ester 93004-32-1P, Phosphonotrithioic acid, (p-chlorophenyl)-, ethyl 2-(ethylthio)ethyl ester 93048-31-8P, Phosphonodithioic acid, methyl-, O-2,4-dichlorophenyl S-Et ester 93048-33-0P, Phosphonothioic acid, methyl-, O-2,4-dichlorophenyl S-Et ester 93115-91-4P, Phosphonodithioic acid, methyl-, S-p-chlorophenyl S-Et ester 93115-93-6P, Phosphonothioic acid, methyl-, O-p-chlorophenyl S-Et ester 93484-18-5P, Phosphonodithioic acid, methyl-, S-ethyl O-1,2,2-trimethylpropyl ester 94408-79-4P, Phosphonothioic acid, ethyl-, O-2,4-dichlorophenyl S-Et ester 94408-80-7P, Phosphonodithioic acid, ethyl-, O-2,4-dichlorophenyl S-Et ester 94409-55-9P, Phosphonodithioic acid, ethyl-, S-ethyl O-2,4,5-trichlorophenyl ester 94489-53-9P, Phosphonodithioic acid, ethyl-, O-p-chlorophenyl S-Et ester 94489-55-1P, Phosphonodithioic acid, ethyl-, S-p-chlorophenyl S-Et ester 94489-60-8P, Phosphonothioic acid, ethyl-, O-p-chlorophenyl S-Et ester 94502-84-8P, Phosphonodithioic acid, ethyl-, S-ethyl O-p-nitrophenyl ester 94584-40-4P, Phosphonothioic acid, ethyl-, S-ethyl O-p-nitrophenyl ester 94601-13-5P, Phosphonothioic acid, methyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester 94624-74-5P, Phosphonodithioic acid, ethyl-, S-ethyl S-[p-(methylthio)phenyl] ester 94981-56-3P, Phosphonodithioic acid, ethyl-, S-ethyl O-1,2,2-trimethylpropyl ester 96294-18-7P, Phosphonodithioic acid, methyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 96634-97-8P, Phosphonochloridithious acid, (1-tert-butyl-2-methylpropenyl)-, ethyl ester 856952-49-3P, Phosphonotrithioic acid, phenyl-, ethyl 2-(ethylthio)ethyl ester 856952-52-8P, Phosphonotrithioic acid, (1-tert-butyl-2-methylpropenyl)-, ethyl 2-(ethylthio)ethyl ester 856953-05-4P, Phosphonodithioic acid, (1-tert-butyl-2-methylpropenyl)-, S-ethyl O-[2-(ethylthio)ethyl] ester 856953-58-7P, Phosphonodithioic acid, phenyl-, S-ethyl O-[2-(ethylthio)ethyl] ester 856954-51-3P, Phosphonodithioic acid, ethyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester 875825-75-5P, Phosphonodithioic acid, ethyl-, S-ethyl S-Ph ester 875830-96-9P, Phosphonothioic acid, ethyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester

RL: PREP (Preparation)

(preparation of)

IT 3497-00-5, Phosphonothioic dichloride, phenyl-
(sulfur removal from)

IT 6083-02-9, Ethanol, 2,2,2-trichloro-, ester with salicylic acid phosphite cyclic anhydride
(O-esters with S-Et ethylphosphonodithioate)

L91 ANSWER 29 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1960:103480 HCAPLUS Full-text

DOCUMENT NUMBER: 54:103480

ORIGINAL REFERENCE NO.: 54:19700f-i,19701a-f

TITLE: Reactions of carboxylic acid-phosphorus trihalide systems. II. Salicylic acid

AUTHOR(S): Cade, J. A.; Gerrard, W.

CORPORATE SOURCE: At. Energy Research Estab. Harwell, UK

SOURCE: Journal of the Chemical Society (1960)
) 1249-53

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable
 OTHER SOURCE(S): CASREACT 54:103480
 ED Entered STN: 22 Apr 2001

AB cf. CA 49, 8093a. In the presence of a tertiary base, the bicyclic phosphorochloridite, 2-chloro-4-oxo-1,3-dioxo-2-phosphanaphthalene (I), **formed** by the reaction of salicylic acid (II) and PCl_3 , gave with acids, such as AcOH , an anhydride (III) and 4-oxo-1,3-dioxo-2-phosphanaphthalene 2-oxide (IV), but with BzOH a benzoyloxy derivative (V) was obtained. With HCl , I gave II and PCl_3 ; IV behaved similarly. The butoxy derivative (VI) of I gave the acid and Bu phosphorodichloridite (VII). A reaction of II and a tervalent P halide appeared to involve a preliminary attack on the phenolic OH group, even in the presence of a base. II (13.8 g.), 15 cc. PhMe , and 15 g. PCl_3 refluxed 3 hrs. and the **product** distilled gave 14 g. I, b14 129-32°. Similarly, 13.8 g. II and 30 g. PBr_3 gave 8.45 g. 2-bromo-4-oxo-1,3-dioxo-2-phosphanaphthalene, b9 143°. II (13.8 g.) and 15.8 g. $\text{C}_5\text{H}_5\text{N}$ in 50 cc. Et_2O added at -10° to 13.8 g. PCl_3 in 100 cc. Et_2O and 23.5 g. $\text{C}_5\text{H}_5\text{N.HCl}$ filtered off gave from the filtrate 11.5 g. I. BuOH (3.7 g.) and 3.95 g. $\text{C}_5\text{H}_5\text{N}$ in 50 cc. Et_2O left 1 hr. at -10° with 10.1 g. I gave VI, b0.03 99-100°, n20D 1.5250, d20 1.191, and 5.65 g. base hydrochloride. Reversing the order of addition did not significantly affect the yield. VI was obtained when an equivalent amount of the bromidite was used. Bu phosphorodichloridite (8.8 g.) in 50 cc. Et_2O added at -10° to 6.9 g. II and 7.9 g. $\text{C}_5\text{H}_5\text{N}$ in 100 cc. Et_2O gave 86% VI. VI (2.5 g.) with cold H_2O gave 1.2 g. II, m. 158-9°; the Et_2O solution gave 0.6 g. oil. AcOH (7.25 g.) was added rapidly to 24.9 g. molten I, the mixture shaken, and volatile material removed at 20°/15 mm., then at 20°/0.1 mm. Distillation gave 5.5 g. AcCl , b. 50-2°, 1 g. impure AcOH , and 0.3 g. residue. The primary residue of 24 g. m. 92-124°. A portion (10 g.) in 20 cc. CHCl_3 and 20 cc. heptane gave 2.2 g. II. AcOH (6 g.) and 20.25 g. I in 100 cc. C_6H_6 gave during 3 days 8.5 g. crystals. This solid (1.85 g.) in 30 cc. Et_2O treated 2 hrs. with 0.9 g. PhNH_2 gave 1.5 g. salicylanilide, m. 135°. Another sample of the solid gave 88% II. Volatile **products** of the primary reaction included HCl , AcCl , and AcOH . I (20.25 g.) in 50 cc. Et_2O added dropwise at -10° to 14.8 g. EtCO_2H and 7.9 g. $\text{C}_5\text{H}_5\text{N}$ and the mixture filtered gave from the filtrate 18 g. residue. Attempted distillation gave 0.9 g. material, b0.05 120°, and 12.8 g. undistillable viscous residue. This **product** was IV, m. 97-100° (C_6H_6). The contents of the trap gave 10.7 g. propionic anhydride and a mixture of acid and III. AcOH , PrCO_2H , and trimethylacetic acid gave by the same procedure the resp. anhydrides (71, 60, and 40.4%), together with IV of variable purity. The **products** obtained in the same way from 8.6 g. crotonic acid, 3.95 g. $\text{C}_5\text{H}_5\text{N}$, and 10.13 g. I were 5.55 g. base HCl , 1.15 g. recovered acid, 3.15 g. impure anhydride, and 4.4 g. of an unidentified compound. In another experiment 3.3 g. of this substance m. 157-8°. BzOH (6.1 g.), 3.95 g. $\text{C}_5\text{H}_5\text{N}$, and 10.15 g. I gave 6.8 g. V, m. 107-10°. With C_6H_6 as solvent the yield was nearly quant. V was very sensitive to heat and moisture, sublimed at 120°/0.02 mm. and gave Ph salicylate. Dry HCl was passed at 0° into 20.25 g. I in 50 cc. Et_2O , left 1 hr. and the volatile material in the trap removed at 20°/15 mm. II (6.1 g.) was filtered off. On attempted distillation, the filtrate decomposed with evolution of HCl . In another experiment volatiles were removed at 25°/0.01 mm. into a trap from which 2.2 g. PCl_3 was obtained. The solid (3.7 g.) from the reaction of 2.4 g. AcOH , 1.6 g. $\text{C}_5\text{H}_5\text{N}$, and 4.04 g. I was degassed 2 hrs. at 50°/0.005 mm., dissolved in 20 cc. Et_2O , HCl passed in, and after 0.5 hr. the volatile **product** removed at 20°/10 mm. Treatment of the residue with 20 cc. warm C_6H_6 dissolved the crystals, leaving 1 g. sirup. The solution gave 2.6 g. II. HCl was passed into 26.2 g. VI in 100 cc. Et_2O at 0°, and after 2 hrs. the volatile matter removed at 15 mm. and then at 50°/0.005 mm. and trapped in 2 lots. The less volatile portion of 9.2 g. gave 5 g. Bu phosphorodichloridite, b16 52-4°. This (3.85 g.) was identified by conversion with 3.26 g. BuOH and 3.48 g. $\text{C}_5\text{H}_5\text{N}$ in Et_2O into 5 g. Bu_3PO_4 , b14 125-7°, n20D 1.432, which with AcCl gave 3.2 g. di-Bu acetylphosphonate, b0.08 78-80°, n20D 1.435; 2,4-dinitrophenylhydrazine, m. 80°. The primary residue gave 3.75 g. II and 0.6 g. orange **product**. Similar results were obtained when no solvent was used. I (10.15 g.) in 20 cc. Et_2O added at -10° to 6.9 g. II and 7.9 g. $\text{C}_5\text{H}_5\text{N}$ in 80 cc. Et_2O , 6.1 g. of $\text{C}_5\text{H}_5\text{N.HCl}$ removed, CH_2N_2 added at 0° to the filtrate, kept overnight at room temperature, the Et_2O removed, the solution extracted with aqueous Na_2CO_3 , dried, evaporated, and distilled gave 6.55 g. Me salicylate, b17 103-4°. Acidification of the aqueous exts. gave 0.3 g. precipitate from which o-methoxybenzoic acid was not obtained.

IT 5381-99-7P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-
 10496-13-6P, Butyl phosphorodichloridite
 37912-73-5P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo-
 109017-74-5P, 4H-1,3,2-Benzodioxaphosphorin-4-one,
 2-butoxy- 109342-59-8P, 4H-1,3,2-Benzodioxaphosphorin-4-

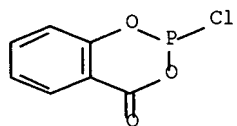
one, 2-hydroxy-, benzoate

RL: PREP (Preparation)

(preparation of)

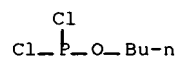
RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



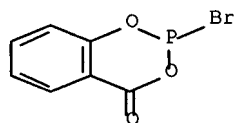
RN 10496-13-6 HCAPLUS

CN Phosphorodichloridous acid, butyl ester (8CI, 9CI) (CA INDEX NAME)



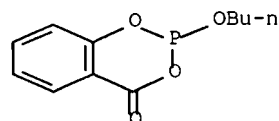
RN 37912-73-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- (9CI) (CA INDEX NAME)



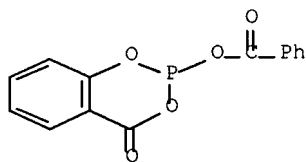
RN 109017-74-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-butoxy- (9CI) (CA INDEX NAME)



RN 109342-59-8 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(benzoyloxy)- (9CI) (CA INDEX NAME)



CC 10G (Organic Chemistry: Heterocyclic Compounds)
 IT 102-85-2P, Butyl phosphite, (BuO)₃P 919-22-2P, Phosphonic acid, acetyl-, dibutyl ester **5381-99-7P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- **10496-13-6P**, Butyl phosphorodichloridite **37912-73-5P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- 80337-06-0P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-oxide **109017-74-5P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-butoxy- **109342-59-8P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-hydroxy-, benzoate 876507-72-1P, Phosphonic acid, acetyl-, (2,4-dinitrophenyl)hydrazone
 RL: PREP (Preparation)
 (preparation of)

L91 ANSWER 30 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1957:34925 HCAPLUS Full-text
 DOCUMENT NUMBER: 51:34925
 ORIGINAL REFERENCE NO.: 51:6668h-i, 6669a-g
 TITLE: Cholesteryl phosphates
 AUTHOR(S): Montgomery, H. A. C.; Turnbull, J. H.; Wilson, W.
 CORPORATE SOURCE: Univ. Edgbaston, Birmingham, UK
 SOURCE: Journal of the Chemical Society (1956)
) 4603-6
 CODEN: JCSOA9; ISSN: 0368-1769
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 OTHER SOURCE(S): CASREACT 51:34925
 ED Entered STN: 22 Apr 2001

AB Cholesteryl di-Ph phosphate (I) with aqueous alc. alkali underwent both hydrolysis and ethanolysis. The major **products** were cholesteryl Ph (II) and cholesteryl Et H phosphates (III). The structures of II and III had been established by independent syntheses. II had been isolated previously when it was believed to be cholesteryl di-H phosphate (IV). IV itself, conveniently **prepared** by hydrolysis of cholesteryl phosphorodichloridate (V), **formed** a stable hemipyridine salt (VI). I (2.4 g.), 120 cc. alc., and 30 cc. 4N KOH refluxed gently 19 hrs. yielded 1 g. II, platelets, m. 160°, [α]_D -28° (rotations measured in CHCl₃ unless otherwise stated). Concentration of the mother liquors afforded 700 mg. white solid and 400 mg. sirup. Recrystn. of the solid yielded 350 mg. III, m. 156-7° (from EtOAc). In another experiment 49 mg. I was similarly treated with alkali and 1.6 moles liberated PhOH measured spectrophotometrically. II was recovered after similar treatment with alkali during 3 days. II (200 mg.), 5 cc. AcOH, and 0.5 cc. concentrated HCl warmed 10 min. at 100°, and the **product** diluted with H₂O gave 150 mg. 3β-chlorocholest-5-ene (VII), m. 88-90°. The filtrates treated with aqueous cyclohexylamine afforded bis(cyclohexylammonium) Ph phosphate (VIII), m. 212° (decomposition). II (425 mg.) refluxed 27 hrs. with 6 cc. AcOH gave 310 mg. 3β-acetoxycholest-5-ene (IX), m. 112°, and VIII. I (100 mg.) and 3 cc. AcOH refluxed 24 hrs. gave 50 mg. IX and cyclohexylammonium di-Ph phosphate, m. 197-9°. Ph phosphorodichloridate (4.2 g.), 2.7 g. 2,6-lutidine (IXa), and 10 cc. C₆H₆ mixed and treated with 7.7 g. cholesterol (X) in 25 cc. C₆H₆, the mixture warmed to 50°, stirred 4 hrs. at room temperature and separated from 2.9 g. IXa.HCl, and the filtrate divided into 2 portions (A and B). A washed with dilute HCl and refluxed 0.5 hr. with iso-PrOH and H₂O afforded 2.6 g. II, m. 160-2°. B mixed with 1.1 g. tetrahydropyran-2-ol and 1.1 g. IXa and set aside 40 hrs. yielded a sirup, presumably cholesteryl Ph tetrahydropyran-2-yl phosphate, which decomposed at 100° during 2 hrs. afforded 3 g. II. X (38.7 g.) in 150 cc. C₆H₆ added to 16.3 g. Et

phosphorodichloridate and 10.7 g. IXa in C₆H₆, the solution warmed to 40°, set aside 18 hrs., and 12 g. IXa.HCl filtered off, 100 cc. tert-BuOH added, the solution refluxed 0.5 hr., H₂O added, and the **product** isolated gave 8 g. prisms, m. 123-4°, C₅₄H₉₁O₄P.H₂O; titration of an aqueous alc. solution with aqueous KOH gave an equivalent weight of 852. The mother liquors evaporated and treated with EtOAc gave 6 g. crude III, which recrystd., m. 155-8°. Salicylic acid (69 g.) and 76.7 g. POCl₃ heated to 150°, and maintained there 2 hrs., and the fraction, b_{0.02} 116-25°, crystallized gave 39.6 g. anhydro(o-carboxyphenyl phosphorochloridate) (XI), prisms, m. 90-3° (from CCl₄). XI (8 g.) in 30 cc. CHCl₃ set aside overnight with 4 g. IXa and 14.2 g. X yielded 2.6 g. cholesteryl o-carboxyphenyl H phosphate (XII), m. 141-2°, [α]_D -20° (alc.), which was readily soluble in dilute NaOH. XII (165 mg.) in AcOH heated 10 min. at 100° with 0.3 cc. concentrated HCl yielded VII. The crude C₅H₅N-containing substance **prepared** from 20 g. X was extracted with ligroine and the exts. deposited 7.5 g. V, m. 110° (decomposition), [α]_D -31°. V (530 mg.) triturated with 1 g. PhOH and NaOEt (from 54 mg. Na and 2 cc. alc.), excess dilute aqueous KOH added, and the precipitate repurified gave 520 mg. I, m. 113°. X (20 g.) converted to crude V, and the **product** hydrolyzed by refluxing 1.25 hrs. with 600 cc. H₂O, the precipitate dissolved in aqueous KOH, the solution filtered through Amberlite resin IR-120(H) and evaporated, the residue refluxed with C₆H₆ and H₂O 4 hrs., and the **product** crystallized gave 10.7 g. IV, irregular prisms, m. 181° (from Me₂CO and moist CCl₄), [α]_D -21° (in alc.). IV was insol. in warm dry C₆H₆, CCl₄, or CHCl₃, but dissolved readily in the presence of H₂O. Azeotropic removal of the H₂O caused IV to precipitate. A less soluble, metastable **form**, m. 187°, was obtained by rapid drying of its aqueous gel. The precipitate from X in the foregoing experiment was recrystd. from C₆H₆ affording VI, m. 178° (with sintering and darkening), [α]_D -36°. An identical compound was **formed** from pure IV and aqueous C₅H₅N. The substance was recovered when its solution in aqueous KOH was acidified with HCl.

IT 120526-38-7

(Derived from data in the 6th Collective Formula Index
(1957-1961))

RN 120526-38-7 HCAPLUS

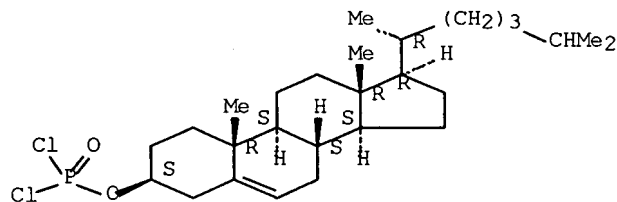
CN Cholesteryl phosphorodichloridate, pyridine deriv. (2:1) (6CI)
(CA INDEX NAME)

CM 1

CRN 6901-51-5

CMF C27 H45 Cl2 O2 P

Absolute stereochemistry.



CM 2

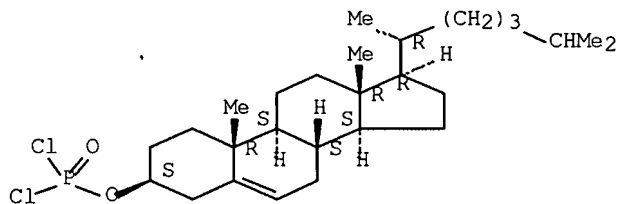
CRN 110-86-1

CMF C5 H5 N

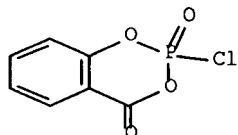


IT 6901-51-5, Cholesteryl phosphorodichloridate
(and its pyridine derivative)
RN 6901-51-5 HCAPLUS
CN Cholest-5-en-3-ol (3 β)-, 3-(phosphorodichloridate) (CA INDEX NAME)

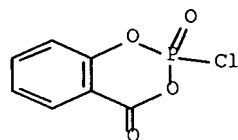
Absolute stereochemistry.



IT 5381-98-6, Salicylic acid, phosphorochloridate, cyclic anhydride (etc.)
RN 5381-98-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



IT 5381-98-6P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide
RL: PREP (Preparation)
(preparation of)
RN 5381-98-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



CC 10 (Organic Chemistry)
IT 604-35-3 13798-39-5 32277-64-8 120090-09-7
120526-38-7 122241-73-0
(Derived from data in the 6th Collective Formula Index (1957-1961))
IT 6901-51-5, Cholesteryl phosphorodichloridate (and its pyridine derivative)
IT 5381-98-6, Salicylic acid, phosphorochloridate, cyclic anhydride (etc.)

- IT 701-64-4P, Phenyl phosphate, (PhO)(HO)2PO 910-31-6P,
 Cholest-5-ene, 3 β -chloro- **5381-98-6P**,
 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide
 7664-38-2P, Phosphoric acid, cholesteryl esters 16545-55-4P,
 Cyclohexylamine, phosphates 57775-14-1P, Phenyl phosphate,
 (PhO)(HO)2PO, compds. with cyclohexylamine 103160-10-7P,
 Cholest-4-ene-4-propionic acid, 3-oxo- 120793-83-1P, Pyran-2-ol,
 tetrahydro-, ester with cholesteryl Ph phosphate 909264-03-5P,
 Cholesteryl ethyl phosphate, (C27H45O)(EtO)(HO)PO
 RL: PREP (Preparation)
 (**preparation** of)
- IT 66778-71-0P, Cholesteryl phenyl phosphate
 RL: PREP (Preparation)
 (**preparation** of (C27H45O)(PhO)(HO)PO and
 (C27H45O)(PhO)2PO)

FULL SEARCH HISTORY

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(FILE 'HOME' ENTERED AT 10:19:20 ON 23 OCT 2007)

FILE 'HCAPLUS' ENTERED AT 10:19:27 ON 23 OCT 2007

E US20070117995/PN

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D ALL

SEL L1 RN

FILE 'REGISTRY' ENTERED AT 10:20:08 ON 23 OCT 2007

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 104-76-7/BI OR 107-12-0/BI OR 108-20-3/BI OR 108-32-7/B
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 108609-96-7/BI OR 109-66-0/BI OR 109-99-9/BI OR
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 1330-20-7/BI OR 14078-41-2/BI OR 141-78-6/BI OR
 142-82-5/BI OR 1634-04-4/BI OR 2430-22-0/BI OR
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 5381-99-7/BI OR 540-88-5/BI OR 55505-26-5/BI OR
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 67-63-0/BI OR 67-64-1/BI OR 67-68-5/BI OR 68-12-2/BI
 OR 69-72-7/BI OR 71-23-8/BI OR 71-36-3/BI OR 71-43-2/BI
 OR 75-05-8/BI OR 75-65-0/BI OR 75-97-8/BI OR 78-92-2/B
 I OR 78-93-3/BI OR 85763-57-1/BI OR 86-48-6/BI OR
 872-50-4/BI OR 9062-74-2/BI OR 96-49-1/BI)

D SCAN

L3 4 SEA ABB=ON PLU=ON L2 AND 1-6/P

D SCAN

L4 52 SEA ABB=ON PLU=ON L2 NOT L3

D SCAN

FILE 'STNGUIDE' ENTERED AT 10:23:32 ON 23 OCT 2007

FILE 'REGISTRY' ENTERED AT 10:30:23 ON 23 OCT 2007

D L3 1-4 RN STR

FILE 'LREGISTRY' ENTERED AT 10:30:51 ON 23 OCT 2007

L5 STR 5381-99-7

FILE 'REGISTRY' ENTERED AT 10:34:37 ON 23 OCT 2007

L6 48 SEA SSS SAM L5

D QUE STAT

FILE 'LREGISTRY' ENTERED AT 10:37:44 ON 23 OCT 2007

L7 STR L5

FILE 'REGISTRY' ENTERED AT 10:40:28 ON 23 OCT 2007

L8 23 SEA SSS SAM L7

D QUE STAT

FILE 'LREGISTRY' ENTERED AT 10:41:58 ON 23 OCT 2007

L9 STR

FILE 'REGISTRY' ENTERED AT 10:47:05 ON 23 OCT 2007

L10 31 SEA SSS SAM L9

L11 1315 SEA SSS FUL L9

SAV L11 NWA492REG/A

FILE 'LREGISTRY' ENTERED AT 10:48:53 ON 23 OCT 2007

L12 STR

FILE 'REGISTRY' ENTERED AT 10:53:17 ON 23 OCT 2007

L13 12 SEA SUB=L11 SSS SAM L12
 L14 261 SEA SUB=L11 SSS FUL L12
 SAV L14 NWA492REGA/A
 L15 3 SEA ABB=ON PLU=ON L2 AND L11
 L16 1 SEA ABB=ON PLU=ON L3 NOT L15
 D SCAN
 D SCAN L3

FILE 'HCAPLUS' ENTERED AT 10:55:18 ON 23 OCT 2007

L17 284 SEA ABB=ON PLU=ON L14
 L18 99 SEA ABB=ON PLU=ON L14/P
 L19 2 SEA ABB=ON PLU=ON L14 /DP
 D SCAN
 L20 99 SEA ABB=ON PLU=ON L18 OR L19
 L21 QUE ABB=ON PLU=ON PY<20043 OR PRY<2004 OR AY<2004 OR
 MY<2004 OR REVIEW/DT
 L22 1 SEA ABB=ON PLU=ON L1 AND L21
 L23 99 SEA ABB=ON PLU=ON L20 AND L21
 L24 QUE ABB=ON PLU=ON PRODUC? OR PROD# OR GENERAT? OR
 MANUF? OR MFR# OR CREAT? OR FORM## OR FORMING# OR
 FORMAT? OR MAKE# OR MADE# OR MAKIN# OR FABRICAT? OR
 SYNTHESI? OR PREPAR? OR PREP#
 L25 272 SEA ABB=ON PLU=ON L17 AND L24
 L26 181 SEA ABB=ON PLU=ON L17(L) L24
 D 1-5 KWIC
 L27 98 SEA ABB=ON PLU=ON L20 AND L24

FILE 'LREGISTRY' ENTERED AT 11:10:50 ON 23 OCT 2007

L28 STR
 L29 STR
 L30 STR

FILE 'REGISTRY' ENTERED AT 11:16:32 ON 23 OCT 2007

L31 10 SEA ABB=ON PLU=ON L2 AND 1-6/NR AND ?ACID?/CNS
 D QUE STAT L30
 D QUE STAT L28
 D QUE STAT L29

FILE 'CASREACT' ENTERED AT 11:19:15 ON 23 OCT 2007

L32 46 SEA ABB=ON PLU=ON L14/PRO
 L33 46 SEA ABB=ON PLU=ON L32 AND L21
 L34 STR L12
 L35 0 SEA SUB=L32 SSS SAM L34 (0 REACTIONS)
 L36 161 SEA ABB=ON PLU=ON L11/PRO
 SAV L33 NWA492CRCT/A
 L37 161 SEA ABB=ON PLU=ON L36 AND L21
 L38 STR L9
 L39 0 SEA SUB=L32 SSS SAM L38 (0 REACTIONS)
 L40 0 SEA SUB=L36 SSS SAM L38 (0 REACTIONS)
 L41 4 SEA SUB=L36 SSS FUL L38 (6 REACTIONS)
 D SCAN
 SAV L41 NWA492CRCTA/A
 L42 4 SEA ABB=ON PLU=ON L41 AND L21

FILE 'REGISTRY' ENTERED AT 11:30:24 ON 23 OCT 2007

D QUE L29
 D QUE L28
 L43 50 SEA SSS SAM L28
 L44 11759 SEA SSS FUL L28
 SAV L44 NWA492REGB/A

FILE 'HCAPLUS' ENTERED AT 11:32:15 ON 23 OCT 2007

L45 14505 SEA ABB=ON PLU=ON L44
 L46 25 SEA ABB=ON PLU=ON L45 AND L17
 L47 8585 SEA ABB=ON PLU=ON L44/RCT
 L48 7 SEA ABB=ON PLU=ON L47 AND L20

D SCAN

L49 7 SEA ABB=ON PLU=ON L48 AND L21

L50 24 SEA ABB=ON PLU=ON L25 AND L45

D 1-5 KWIC

L51 25 SEA ABB=ON PLU=ON L46 OR L48 OR L50

L52 25 SEA ABB=ON PLU=ON L51 AND L21

SAV L52 NWA492HCP/A

DEL SEL

SEL L1 AU

L53 55 SEA ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR "MOELLER,
OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE,
KLAUS-DIETHER"/AU)

DEL SEL

D L1 PA

SEL L1 PA

L54 70 SEA ABB=ON PLU=ON "OXENO OLEFINCHEMIE G M B H
GERMANY"/PA,CS,SO,CO

L55 25 SEA ABB=ON PLU=ON L53 AND L54

FILE 'LREGISTRY' ENTERED AT 11:39:05 ON 23 OCT 2007

D QUE L53

FILE 'ZCAPLUS' ENTERED AT 11:40:06 ON 23 OCT 2007

E FRIDAG D/AU

L56 QUE ABB=ON PLU=ON FRIDAG D?/AU

D QUE L53

E MOELLER O/AU

L57 QUE ABB=ON PLU=ON MOELLER O?/AU

E MOLLER O/AU

L58 QUE ABB=ON PLU=ON MOLLER O?/AU

E ORTMANN D/AU

L59 QUE ABB=ON PLU=ON ORTMANN D?/AU

E WIESE K/AU

L60 QUE ABB=ON PLU=ON ("WIESE K"/AU OR "WIESE K D"/AU OR
"WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE
KLAUS DIETHER"/AU)

L61 QUE ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)

FILE 'HCAPLUS' ENTERED AT 11:45:12 ON 23 OCT 2007

L62 203 SEA ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)

L63 25 SEA ABB=ON PLU=ON L62 AND L54

L64 16 SEA ABB=ON PLU=ON L62 AND ?PHOSPHOR?

L65 34 SEA ABB=ON PLU=ON L55 OR L63 OR L64

L66 34 SEA ABB=ON PLU=ON L65 AND L21

D 1-34 AU

SAV L66 NWA492HCPIN/A

L67 25 SEA ABB=ON PLU=ON L52 NOT L66

L68 0 SEA ABB=ON PLU=ON L52 AND L1

L69 1 SEA ABB=ON PLU=ON L17 AND L1

L70 1 SEA ABB=ON PLU=ON L23 AND L1

D SCAN

D L1 CC

L71 QUE ABB=ON PLU=ON 29/SC,SX

L72 QUE ABB=ON PLU=ON 45/SC,SX

L73 2 SEA ABB=ON PLU=ON L23 AND L72

D 1-2 AU

L74 3 SEA ABB=ON PLU=ON L25 AND L72

L75 87 SEA ABB=ON PLU=ON L25 AND L71

L76 49 SEA ABB=ON PLU=ON L23 AND L71

L77 2 SEA ABB=ON PLU=ON (L73 OR L74) AND (L75 OR L76)

L78 3 SEA ABB=ON PLU=ON (L73 OR L74) OR L77

L79 3 SEA ABB=ON PLU=ON L78 AND L21

L80 28 SEA ABB=ON PLU=ON L79 OR L67

SAV L80 NWA492HCP/A

L81 27 SEA ABB=ON PLU=ON L80 NOT L66

FILE 'CASREACT' ENTERED AT 11:56:06 ON 23 OCT 2007

L82 21 SEA ABB=ON PLU=ON ("FRIDAG, DIRK"/AU OR "MOELLER,
OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE,
KLAUS-DIETHER"/AU)
L83 30 SEA ABB=ON PLU=ON (L56 OR L57 OR L58 OR L59 OR L60)
L84 30 SEA ABB=ON PLU=ON L82 OR L83
L85 8 SEA ABB=ON PLU=ON L84 AND L54
L86 10 SEA ABB=ON PLU=ON L84 AND ?PHOSPHOR?
L87 15 SEA ABB=ON PLU=ON (L85 OR L86)
L88 15 SEA ABB=ON PLU=ON L87 AND L21
SAV L88 NWA492CRCTIN/A
L89 4 SEA ABB=ON PLU=ON L42 NOT L88

FILE 'STNGUIDE' ENTERED AT 11:59:33 ON 23 OCT 2007

D QUE L88

D QUE L66

FILE 'CASREACT, HCAPLUS' ENTERED AT 12:00:36 ON 23 OCT 2007

L90 34 DUP REM L88 L66 (15 DUPLICATES REMOVED)
ANSWERS '1-15' FROM FILE CASREACT
ANSWERS '16-34' FROM FILE HCAPLUS
D L90 1-34 IBIB AB
D QUE STAT L89
D QUE STAT L81

FILE 'CASREACT' ENTERED AT 12:02:26 ON 23 OCT 2007

FILE 'STNGUIDE' ENTERED AT 12:03:26 ON 23 OCT 2007

FILE 'CASREACT, HCAPLUS' ENTERED AT 12:03:45 ON 23 OCT 2007

L91 30 DUP REM L89 L81 (1 DUPLICATE REMOVED)
ANSWERS '1-4' FROM FILE CASREACT
ANSWERS '5-30' FROM FILE HCAPLUS
D L91 1-4 IBIB AB FHIT
D L91 5-30 IBIB ED ABS HITSTR HITIND